PAPER TRADE JOURNAL
Title Reg. U. S. Pat. Off.

Vol. 117, No. 5 Thursday, July 29, 1943 Price Ten Cents

New Basic Newsprint Price to be $58 a Ton

Joint Announcement By United States and Canada Governments Grants A Second Ceiling Price Increase of $4 A Ton — Quebec Department Is Investigating Merits of "Gasogene," From Wood.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., July 26, 1943—The announcement, made jointly from Ottawa and Washington, that newsprint prices both in Canada and the United States will be increased by $4 per ton, will, with the $4 increase approved earlier this year, make the basic price $58 per ton, delivered at New York, as against $50 previously.

The announcement comes after searching inquiries and protracted negotiations, representatives of both countries visiting Washington, Montreal and Ottawa in turn. As a result of their investigations they satisfied themselves that there had been a further increase in costs and to this was added the conviction that to ensure maintenance of the already war-restricted supply it was necessary to meet the requests of manufacturers, if only in part.

What the manufacturers had been asking for was another price advance of at least $6 per ton. It was indicated at meetings in Montreal recently that the authorities might approve a $4 increase, but the operators continued to press for a further advance. The contention of the industry has been that to encourage wood pulp cutting and newsprint production a reasonable profit margin must be allowed, otherwise the supply might be endangered. They further contended that with the price increase set at $4 there would be grounds for still another application on prices, particularly if costs continue their upward climb. However, the opinion is expressed in some quarters that with the increase of $4 earning results of some newsprint companies may not be far from the level of last year, which was considered fairly satisfactory under all the circumstances.

Donald Gordon, the chairman of the Wartime Prices and Trades Board, in making the announcement at Ottawa, said:

"The whole field of pulp and paper production by Canada now is under active consideration by the board.

"While the board regrets the necessity of increasing publishers' costs at the present time, it feels that its first concern must be to provide production sufficient to assure that essential supplies will be available."

Criticism in Parliament and Press

Following the announcement of the increase in the price of newsprint there was some criticism in Parliament at Ottawa. John Diefenbaker, one of the leading Conservative members, expressed the fear that increase in the price of newsprint and any failure of Canada to maintain at a good level newsprint supplies to the United States would produce a serious reaction from the press of that country toward Canada and its war policies. He said there had already been a very pronounced reaction on the part of American publishers towards the restriction that had taken place in Canada in the production of the necessary pulp, and the feeling was growing that Canada was actually trying to take some advantage of the United States, whose main importations of newsprint came from Canada.

The Montreal Gazette, in an editorial on the subject, held that far more light than had yet been apparent was needed on both the price increase and the limit of 210,000 tons of newsprint a month on deliveries to U. S. publishers, not only because "the heat already engendered" might threaten the post-war profits of the Canadian newsprint industry in the big U. S. market, but "also because there is a more immediate threat that the cordial wartime relations between the two countries may be soured by a feeling, already held in some U. S. quarters, that Canada is grabbing through the newsprint prize jump for more American dollars."

It added: "What is now required, and urgently, is a further and more detailed statement from price control heads of the two countries. This should set out factual, specific information on the position of the newsprint industry as a whole, which would seek to clarify and justify the price advance as well as the curb on production. It has been stated that the Canadian Prices Board has made exhaustive surveys of the industry, especially as to increased costs and effect on earnings. These satisfied both the Board and U. S.

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Salvages Much Pulpwood From River Bottom

Consolidated Water Power & Paper Co. Recovers 64 Cords of Wood And Expects To Obtain Hundreds More—Mills Are Assessed Water Tolls—A. B. Hansen Appointed By WPB—Other Industrial News.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 26, 1943—In its program to conserve materials difficult to obtain in wartime, the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., retrieved 64 cords of pulpwood from the river bottom, and expects several hundred more when its salvaging operations are completed.

The mill pond, where logs are floated to the woodroom, was lowered seven and a half feet on a Sunday. A crew of 75 men, with three locomotive cranes, removed 34 carloads of accumulated material, out of which the pulpwood was recovered. Work will be continued on cleaning up the river bottom.

Use of barking drums has been discontinued by Consolidated in order to permit hemlock to be peeled by hand, with laborers paid by the cord. This was done so the bark could be shipped to tanneries to help make up for a serious shortage. The bark formerly was used for fuel.

Mills are Assessed Water Tolls

Semi-annual tolls of $156,275 have been levied for the last half of 1942 by the Chippewa and Flambeau Improvement Company against water power users benefiting from its chain of controlled reservoirs. The schedule has been approved by the Wisconsin Public Service Commission, and includes the following tolls:

Flambeau Paper Company, Park Falls, $22,860; Lake Superior District Power Company, Ashland, $18,998, and at Ladysmith, $4,724; Cornell Wood Products Company, Cornell, $10,595; Northern States Power Company, Eau Claire, $83,681; Eau Claire Dells Improvement Company, Eau Claire, $15,418.

A. B. Hansen to Speed Up Pulp Output

A. B. Hansen, general manager of the Northern Paper Mills, Green Bay, Wis., has been selected by Donald Nelson, chairman of the War Production Board, to speed up pulp production. He will be deputy director of WPB's pulp and paper division and was expected to take over his duties within a few days. Mr. Hansen's appointment was sponsored by the industry, according to the American Paper and Pulp Association, in the belief he will be able to provide remedial steps to prevent a drastic reduction in the amount of raw materials available.

J. C. R. Whiteley Goes to Home Office

J. C. R. Whiteley, general manager of the Marinette Paper Company, Marinette, Wis., has been transferred by the parent organization, the Scott Paper Company, to the home office at Chester, Pa., where he has been appointed by Thomas B. McCabe, president, as director of post-war planning for the entire Scott organization. He will assume his new duties about September 1.

R. C. Mateer, president of the Marinette Paper Company, announces that Mr. Whiteley's sucessor will be Darcy B. Wilkinson, at present personnel director of the Scott company. He has been with the company for more than 20 years and was made personnel director in 1937.

Mr. Whiteley served as assistant to the president and as assistant secretary-treasury and director of the Marinette company, and was a director of the Stephenson National bank.

Kimberly-Clark Workers to Hold Outing

Employees of the Neenah, Wis., mills of Kimberly-Clark Corporation will hold their annual picnic at Riverside Park, Neenah, Sunday, August 8. The program will be handled by the Kimberly-Clark Activities Association, and will include entertainment by WLS radio stars of Chicago, baseball and other amusements. Teams from the Lakeview and Badger-Globe mills will compete.

A. J. Armstrong Joins Marathon Mills

A. J. Armstrong, who has been principal of the high school at Menasha, Wis., for the last 13 years, has resigned to accept a postion with the sales department of the Menasha Products division of the Marathon Paper Mills Company, Menasha. In his college days he was a noted athlete and was given an all-American football rating.

Jagodzinski-Kempen Nuptials

Corporal William F. Jagodzinski, who formerly was employed in the accounting department of the Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., was married July 14 to Miss Bernadine Kempen of Rudolph, Wis. The bridegroom is stationed at Sioux Falls, S. D., in the army air force finance office, and the couple will reside there.

Appleton Wire Weavers Killed

Three wire weavers employed by the Appleton Wire Works, Appleton, Wis., were killed late Saturday evening, July 17, when their automobile was struck at a rural crossing by a passenger locomotive. They were Edward F. Buchert, John H. Wood and Anton P. Stacer. Mrs. Stacer, also a passenger in the car driven by Mr. Buchert, was the fourth victim. They were returning from a picnic held during the afternoon and evening by the wire weavers at Stroebe's Island.

Holland Paper Co. to be Distributor

Announcement has been made of the appointment of the Holland Paper Company, Buffalo, N. Y., as distributor in that area of Forward Linen Ledger and Escort Ledger and Machine Posting, products of the L. L. Brown Paper Company, Adams, Mass. The first named paper is made from 100% new cotton cuttings and the latter from 50% of this high-grade raw material. The Holland Paper Company is now distributing attractive folders relating to both papers.

Strong Demand Creates Tight Paper Market

Lower Mill Production Attributed A Factor In Firmer Paper Distribution Situation—Possibility of WPB Extension of Priority Ratings To Many Types of Paper Is Discussed — Other Late News.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 26, 1943—Advanced prices of newsprint, which are expected to cause considerable conversation in the ranks of newsprint users, provided the main topic for discussion in Chicago paper trade ranks this week. Comment also centered around important orders affecting the industry which are reported considered including price regulations for groundwoods, books and writing papers. Paper trade executives here also discussed the possibility of the War Production Board extending priority ratings to virtually all grades of paper and paper products with the possible exclusion of newsprint, magazine, book and tissue papers. This would just about turn over to WPB the controls over the types and quantities of paper to be produced, accentuating again the importance of the "end use" program which is gradually spreading in this market.

Mill operations in general were said to reflect the serious production problems facing the industry with operating ratios down materially during the first part of the month compared to June. Demand for all papers continued strong, according to local reports. Waste papers were tight with increasing demand accentuating the need for more attention to collections by combined and intensive advertising programs.

Salesmen Hear Talk on Distribution

The western division of the Salesmens Association of the Paper Industry was told at its Monday, July 19, meeting that the only real hope of distribution was to take an active interest in local politics. The guest speaker was J. T. Meek, executive secretary of the Illinois Federation of Retail Associations, who stated his belief that distribution, "largely through a misunderstanding of its importance" was in a "triple squeeze consisting of civilian goods shortages, higher taxes and narrowing price margins." He stated that while war requirements must, of necessity, come first, it was "regrettable that industry was still confronted with a philosophy of scarcity and subsidy which recognized no relationship whatsoever between price and production." Meek expressed the belief that most merchants wanted to see OPA abolished, pricing functions taken over by other available agencies, specific pricing formulas written into law by Congress and recognition of the fact that for "labor to produce it must be paid, just as it is necessary to have an incentive to produce and distribute."

The speaker added that contract must be with members of Congress who "on September 14 would return to Washington with the cards stacked against them unless individual voters reawakened to the necessity of participation in constructive politics."

Another guest at the meeting, which was presided over by Pat Patterson of the Flambeau Paper Company, was John W. E. Timm, representing the Department of Revenue of the State of Illinois. Mr. Timm explained new amendments to the Retailers Occupation Tax, pointing out that if merchants were selling goods to the ultimate consumer—and not for resale—they would be construed as "doing business in the State of Illinois" and liable for the tax regardless of where the goods were shipped from and where title passed. Sales to printers by manufacturers' representatives were construed, other things being equal, as sales to the ultimate consumer in view of the fact that recent court decisions make the printer the final user of the paper. On the other hand, sales to jobbers and converters would be construed as sales for resale and not subject to the 2 per cent tax, inasmuch as the former re-sell the product.

Roach to Attend TAPPI Meeting

This publication had the opportunity, this week, of interviewing Corwine E. Roach, president of the National Paper Trade Association. Mr. Roach returned two weeks ago from a month's vacation in Canada and looks tanned, rested and virtually recovered in health. He expressed great appreciation of the fact that the N. P. T. A. had appointed a "president pro tem" which permitted him to attain a "much easier state of mind," and was also gratified that the Board of Kiwanis International had also given him "leave of absence" and insisted that he not resign. The N. P. T. A. president expects to make his first association appearance at the TAPPI meetings in Chicago in September but still plans to take it easy both in his own business and all other activities until he is completely recovered. He expressed extreme pleasure over the many letters and floral tributes received from paper trade executives all over the country.

Outlines Need for Paper Scrap

Albert P. Belanger of the Alton Box Board Company, is quoted as having stated this week that a new all-out drive is necessary to forestall a threatened shortage of scrap paper. Mr. Belanger is the inventor of the impregnated paper bomb ring which has been the means of saving millions of pounds of critical steel in the manufacture and transportation of bombs. Mr. Belanger stated that 300 million pounds of scrap paper will be needed this year for bomb rings and added that supplies are "woefully lacking." He pointed out that the most critical need was for kraft paper—paper bags, wrapping paper and cardboard boxes. In making the bomb ring the reclaimed paper is wound into a ring and impregnated with special waterproof glue. In addition to saving steel, the ring permits loading of many more bombs on railroad cars and on shipboard.

Ruth H. Spickerman Buried

CINCINNATI, Ohio, July 26, 1943—Mrs. Ruth H. Spickerman, wife of C. W. Spickerman, well known in paper circles, passed away on July 12 after a long illness in Miami, Fla. The funeral and burial were held at Cincinnati on July 15. Mr. Spickerman, who is now retired, is living at 1617 N. West 8th street, Miami, Fla.

NEW BASIC NEWSPRINT PRICE TO BE $58 A TON

(Continued from page 7)

price control authorities that the price jumps this week and last February were needed if production was to be maintained.

"Why should this data be withheld from the publishers and the public, and stowed away in the secret recesses of official files in Ottawa and Washington? There may be good reasons for not releasing all of the details on the industry or the data on specific companies, but there seems no good reason why a summary could not be issued of the general facts and conclusions assembled."

Investigating Fuel Gas from Wood

The Quebec Department of Lands and Forests is studying a "gasogene" motor which transforms wood and charcoal into a fuel gas with to date results that were described as successful. Engineers of the forestry service have already built two "gasogene" motors that are being used by the technical school. One, using wood as a basic fuel, operates a sawmill, and although there is a 30 per cent loss in power as compared with gasoline, the installation of the new device is considered successful because it uses a cheaper fuel that lasts twice as long as gasoline, crude oil, or kerosene, officials say. The other "gasogene" motor, using charcoal as a basic fuel, transmits its energy to an electrogene of three kilowatts, producing substantial power.

A small gasogene engine to be installed on a fisherman's boat has been built by L. G. Dubois, chief engineer of the forestry service, and is now being studied at McGill University in Montreal.

Fernand Boutin, chief of the provincial forestry service, says he does not believe that charcoal and wood gas will ever replace gasoline as a fuel for motor vehicles, but he does believe that this less powerful gas is a proper fuel for stationary motors.

First to be Interested in Gasogene

"The Province of Quebec," he said, "was the first in Canada, and probably on the whole American continent, to be interested in gasogene.

"The first experiments were conducted at the Three Rivers technical school in 1925, but later, the forestry service took charge of research and in 1941 a gasogene motor was functioning normally and continually at Duchesnay.

"The National Research Service in Ottawa and some American engineers were following closely the results obtained in Quebec and we feel sure that the gasogene motor will soon be a commercial device used in small enterprises and rural districts."

OPA Sets $58 Ton Newsprint Price

WASHINGTON, D. C., July 29, 1943—Effective September 1, 1943, the ceiling price of standard newsprint paper will be increased $4.00 per ton, the Office of Price Administration and the Canadian Wartime Prices and Trade Board announced today.

This will bring the manufacturers' ceiling "port price" for newsprint to $58.00 per ton, with maximum prices for the various newsprint zones adjusted accordingly.

Today's joint announcement is made well ahead of the effective date for the convenience of both the newspaper publishers and the newsprint producers concerned.

All standard newsprint paper sold in the United States will be governed by the new ceilings, and newsprint prices in Canada will be advanced an equivalent amount.

Current United States consumption of newsprint is approximately 300,000 tons per month, orginating as follows: From the current Canadian quota, 210,000 tons; from Newfoundland, 15,000 tons; from the United States, 70,000 tons. This represents an annual consumption in this country of 3,000,000 tons.

Other grades of newsprint which come under Maximum Price Regulation No. 130 (Standard Newsprint Paper) are also increased $4.00 per ton, effective September 1. Newsprint commonly known as "side run news" will advance to $58.00 per ton, "port" ceiling. Superstandard newsprint will advance to $61.50 per ton, "port" ceiling.

Today's increase in maximum prices of newsprint was jointly announced by the Office of Price Administration and the Canadian Wartime Prices and Trade Board after thorough consultation in both Washington, D. C., and Montreal, Canada, and after OPA had consulted with representatives of the American newspaper publishers and with American newsprint manufacturers.

Increased costs of wood procurement in both the United States and Canada are the fundamental factors necessitating this increase in ceiling prices, today's joint announcement said.

"A number of newsprint mills in both the U. S. and Canada are operating at a loss," said Price Administrator Prentiss M. Brown. "It cannot be hoped to adjust the price to a point where each individual mill becomes profitable, but this Office is charged with the duty of adjusting prices, upwards or downwards, as will be generally fair and equitable. It is felt, therefore, that this order raises the price to the minimum extent required by the Emergency Price Control Act."

To meet these increased costs, Canadian producers asked for an increase of $6 per ton, while United States producers asked for an increase of $5 to $6 per ton. These requests for increases from the then current levels were received in May and June.

In granting an increase of $4 per ton, Mr. Brown said that an increase of more than this amount could not be justified.

These conversations indicated that today's increase is necessary in order to insure continued production of newsprint requirements of the United States.

This is the second increase in newsprint prices since 1938. An increase of $4.00 per ton was granted March 1, 1943. At that time Canadian producers asked for an increase of $8.00 per ton. In then granting an increase of $4.00 per ton, Price Administrator Brown told the Canadian Wartime Prices and the Trade Board that the door would be left open for further consideration of the price situation at a later date.

FINANCIAL NEWS

New York Stock Exchange

High, Low and Last for Week Ending July 24, 1943

STOCKS

	High	Low	Last
A. P. W.	2½	2⅜	2½
Armstrong Cork Co.	39¼	37⅝	37¾
Celotex Corp.	14⅜	14	14¼
Celotex Corp., pf.	20¾	20	20
Certain-Teed Products Corp.	7	6⅝	6⅞
Certain-Teed Products Corp., pf.	60⅝	58	60⅜
Champion Paper & Fibre Co.	23¼	22½	23⅛
Champion Paper & Fibre Co., pf.	107½	106¾	107½
Congoleum Nairn Co.	24⅜	24¼	24¼
Container Corp. of America	22⅞	22¼	22⅞
Continental-Diamond Fibre Co.	15	14⅝	14⅝
Crown-Zellerbach Co.	16	15⅝	15⅝
Crown-Zellerbach Co., pf.	95½	94½	95½
Dixie Cup Co.	15⅞	15¾	15¾
Dixie Cup Co., —A.	44	43½	43¾
Flintkote Co.	21⅝	20⅞	21⅛
Flintkote Co., pf.	108½	108¼	108¼
Robert Gair	3½	3	3⅛
Robert Gair, pf	13½	13⅛	13⅛
International Paper Co.	13⅛	12⅝	12¾
International Paper Co., pf.	62½	60½	62¼
Johns-Manville Corp.	86¾	85¼	86¾
Johns-Manville Corp., pf.	136	132½	132½
Kimberly-Clark Corp.	34	34	34
Mac Andrews & Forbes	27½	27¼	27¼
Mac Andrews & Forbes, pf.	133	133	133
Masonite Corp.	43	42	42
Mead Corp.	9¾	9⅛	9½
Mead Corp., pf. A-6%	85	85	85
Mead Corp., pf. B-5½%	78	75½	78
Paraffine Companies, Inc.	....	....	....
Paraffine Companies, Inc., pf.	....	....	....
Rayonier, Inc.	15⅜	14½	15¼
Rayonier, Inc., pf.	30	29¾	30
Ruberoid Co.	27¾	26½	27
Scott Paper Co.	42⅜	42	42⅜
Scott Paper Co., pf.	113½	112¾	113
Sutherland Paper Co.	33	31¼	33
Union Bag & Paper Corp.	11¼	11	11¼
United Paperboard Co.	5¼	5	5
U. S. Gypsum Co.	73¾	72	72½
U. S. Gypsum Co., pf.	....	....	....
West Virginia Pulp & Paper Co.	15¼	15⅛	15¼
West Virginia Pulp & Paper Co., pf.	....	....	....

BONDS

Abitibi Pulp & Paper Co. 5s '53	....	....	....
Celotex Corp. 4½s '47	101¼	101	101
Certain-Teed Products Corp. 5½s '48	100¾	99¾	100¼
Champion Paper & Fibre Co. 4¾s '50	....	....	....
International Paper Co. 6s '55	107½	107	107
International Paper Co. 5s '47	104½	104½	104½
Mead Corp. 3¼s '53	....	....	....
West Virginia Pulp & Paper Co. 3s '54	104	104	104

New York Curb Exchange

High, Low and Last for Week Enging July 24, 1943

STOCKS

	High	Low	Last
American Box Board Co.	8	7¾	8
Brown Co., pf.	....	....	....
Great Northern Paper Co.	34	34	34
Hummel-Ross Fibre Corp.	4⅜	4⅛	4⅜
National Container Corp.	14¼	13	14¼
St. Regis Paper Co.	4¼	3⅞	4
St. Regis Paper Co., pf.	135	134¾	135
Taggart Corp.	4½	4½	4½

BONDS

American Writing Paper Co. 6s '61	95	95	95

Abitibi Reorganization is Favored

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., July 26, 1943—Common shareholders of Abitibi Power and Paper Company, Ltd., met in committee recently and decided to work in close cooperation with the preferred shareholders' committee with a view to bringing about a plan of reorganization at the earliest possible date. R. G. Meech, chairman of the common shareholders' committee, is of the opinion that in view of the greatly improved assets and earnings position of the company, it should not be difficult to devise a plan which would fully protect the bondholders and at the same time leave the owners of the properties, the shareholders, in their proper relationship. The result of the privy council decision and its favorable effect on the position of equity holders was gone into thoroughly at the recent meeting of common shareholders.

Since the privy council handed down its decision on July 8th, validating the Abitibi Power and Paper Company, Ltd., Moratorium Act of the Ontario legislature, securities of the company have advanced in the stock market to date from $41,690,000 to $48,270,000, or an increase of $6,580,000. The bonds rose $1,933,000, notwithstanding the privy council's decision preventing a forced sale on behalf of bondholders of the company's assets. It is taken as reflection of the feeling among investors that the existing position of the company warrants a favorable view on the bonds at recent levels, in prospect of consummation in the near future of a re-organization plan whereby interest payments could be resumed. The advance in the six per cent. preferred stock has been $2,878,000 and in the seven per cent. preferred $110,000, while the common shares have appreciated in value by $1,659,000.

Johns-Manville Profits Off

The Johns-Manville Corporation and its subsidiaries had a consolidated net income in the second quarter this year of $1,059,802, equal to $1.19 a common share, Lewis H. Brown, president, reported. In the corresponding three months of 1942 the net was $1,103,054, or $1.24 a share.

Sales for the quarter ended with June increased to $27,274,765 from $26,871,075 in the similar quarter a year ago. Income and excess profits taxes amounted to $2,702,859 compared with $4,790,167.

Mr. Brown announced that the company, pursuant to provisions of the statute requiring renegotiation of war contracts, plans a refund to the Federal Government of $883,500 of profits realized in 1942, computed after allowance for taxes. "Of this amount," he said, "$65,000 will be paid in cash and the balance, $418,500, will be deducted from the post-war refund or excess profits taxes due from the Government."

Whitaker Earnings Lower

The Whitaker Paper Company reported earnings before taxes in the first half of 1943 were $375,923, compared with $430,096 in the same period in 1942. Earnings after provision for estimated income tax and preferred dividend were equal to $4.61 a share in 1943, compared with $5.41 in 1942.

Directors of the company have declared a regular quarterly dividend of $1.75 a share on the preferred stock, and a dividend of $1 a share on the common stock. Both payments will be made October 1 to stockholders of record September 15. The common stock dividend is the third this year.

Offers Celotex Bonds

Celotex Corp. filed with the Securities and Exchange Monday an amendment to the registration statement filed ten days ago which covered the proposed issuance and sale to the public of $3,000,000 of twelve-year 3¾% debentures, due 1953.

The amendment sets the unit price of the debentures at 100½ per cent plus accrued interest from July 1 to date of delivery. Underwriting commissions are 3½%. Proceeds to the corporation will be $2,910,000, exclusive of expenses estimated at $31,403.

Included in the amendment was the list of underwriters and their participation as follows: Paul H. Davis & Co., $400,000; A. G. Becker & Co., Inc., $300,000; Central Republic Co., Inc., $300,000; Hornblower & Weeks, $300,000; Laurence M. Marks & Co., $300,000; Milwaukee Co., $300,000; F. S. Moseley & Co., $300,000; Paine Webber, Jackson & Curtis, $300,000; Union Securities Corp., $300,000, and Kebbon, McCormick & Co., $200,000.

Sets Specific Prices on Dishes

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1943.—Manufacturers of groundwood paper board food dishes were provided with specific dollars-and-cents ceilings by the Office of Price Administration today.

These ceilings, which will not alter prices at any sales level, have been added to a table already providing dollars-and-cents maximum prices on white lined paper board dishes and wood or woodpulp dishes in Maximum Price Regulation No. 359 (Certain Converted Paper Products.)

Amendment No. 3 to this regulation, effective July 29, 1943, lists the following ceilings for groundwood paperboard dishes, per thousand for less than 200,000 units.

Size of Dish	Ceiling Price
25	$1.53
50	1.78
100	2.22
200	2.81
300	4.84
1000	13.30

These ceilings are 5% below those for white lined paper board dishes, in keeping with the historical differential between these two types of dishes.

In the same amendment, OPA established a ceiling of $1.74 for 5 inch groundwood paperboard cake circles, basis weight 65 to 85 pounds, adding this ceiling to the list of others for different size plates of this type.

Provisions relating to quantity discounts for sales of fibre spoons and forks were also altered to conform with established practices of the majority of manufacturers, being made 5% on sales of 5 to 24 gross packages and 10% on sales of 25 gross packages and over.

Farris Establishes Valve Repair Div.

Plant engineers and maintenance men who are troubled with the difficulties of replacing or repairing leaking and worn valves will be interested in the announcement of Farris Engineering Company that they have established a new division to handle valve repairs.

This division of the company is manned by skilled mechanics engaged in the actual manufacturing of valves, and is fully equipped to speedily recondition and reconstruct all types of reducing, relief, and standard or special valves and control apparatus. Facilities of the department also include complete testing apparatus. Inquiries should be addressed to the company at Ridgefield, N. J.

Employee Morale

[FROM OUR REGULAR CORRESPONDENT]

The new series of three studies made by the Metropolitan Life Insurance Company on the subject of employee morale will be welcomed by executives of war production industries who are faced with the problem of how to increase employee consciousness of their role in the war effort. The series treats the subject from three angles as implied in the titles of the studies: "Planning and Organizing a Morale Program," "Stimulating and Maintaining Employee Morale," and "Reducing Absenteeism Through Employee Education."

"Planning and Organizing the Morale Program" is a study which shows the behind-the-scenes work that is essential before an effective morale program can begin to operate with the employees. It offers the examples of the planning and organization procedures of many well-known companies which have successfully launched morale programs that have been carefully planned to the last detail. Of special interest in this study are the presentation of the committee system of organization and functions of the publicity department.

The second of these studies, "Stimulating and Maintaining Employee Morale," brings together the practices which obtain in some 45 well-known industrial companies for introducing and keeping alive the feeling of responsibility and "war consciousness" among the employees. It reports on the effectiveness of slogans, departmental campaigns, awards, publicity, recreation, exhibitions and other stimuli as used successfully in these companies.

"Reducing Absenteeism Through Employee Education" undertakes to show how companies wage an unrelenting fight against preventable absence from the job. It reproduces the hard-hitting publicity that has been so successfully used in making absenteeism unpopular in the plant and office. It demonstrates by illustration the good work that can be done in combatting this evil through the media of the annual report to employees, the employee magazine, the war booklet, attendance scoreboards, contests, and the individual approach. Every thoughtful executive will be interested in the suggestions offered in this study for the reduction and elimination of lost time through absenteeism.

Copies of any or all of these reports will be sent to executives who make their request on their business stationery. Address: Policyholders Service Bureau, Metropolitan Life Insurance Company, 1 Madison avenue, New York (10), N. Y.

Sutherland Profits Up

The Sutherland Paper Company reports for the six months ended June 30, 1943, a net income of $370,808 after all charges including provision of $65,220 for Federal income and excess profits taxes, equivalent to $1.29 a common share. This compares with net income of $349,054, or $1,21 a share, for six months ended June 30, 1942, after Federal income and excess profits taxes of $814,460.

National Container Earns 53 Cents

The National Container Corporation for the quarter ended March 1, 1943, reports a net income of $175,140, or 53 cents a share.

Rules on Print Paper Definition

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1943—"Print paper as employed in War Production Board Limitation Order L-240, covering print paper for newspapers, has been defined to include paper reclaimed wholly or partly from white or printed waste, as well as new paper made from virgin fibers.

This clarification of the definition is contained in Interpretation No. 1 of Limitation Order L-240, controlling delivery and use of print paper for newspapers, made public today by WPB.

Reclaimed waste paper is not considered as ex-quota on the production level, as such paper may not be added to the tonnage which may be produced under Canadian and United States orders limiting mill operations. Consequently, it cannot be considered as ex-quota on the consumption level. It must be included together with new paper, in computing a publisher's permitted usage under the order.

A contrary ruling, H. M. Bitner, Director of the Printing and Publishing Division of WPB declared, would give an unfair advantage to newspaper publishers ownings paper mills. Furthermore, it was pointed out by A. G. Wakeman, Director of the Pulp and Paper Division, that waste paper is used exclusively in making paperboard, the supply of which is at least as critical as newsprint. Therefore, the reuse of newsprint waste by newspaper publishers on an ex-quota basis would reduce the available amount of other important products.

If a mill added waste paper to virgin fibre in making paper, the cost per ton would be higher than the cost of the same amount of paper made solely from virgin pulp, Mr. Bitner pointed out. In view of the OPA price ceiling, such an operation would be uneconomical for any except a captive mill—that is, one owned and operated by a publisher.

Simplified Practice on Photo Paper

The recently proposed revision of Simplified Practice Recommendation R98-36, Photographic Paper, has been accorded the required degree of acceptance by the industry, and is to become effective August 1, 1943, according to an announcement by the Division of Simplified Practice, National Bureau of Standards. This recommendation will be identified as R98-43, Photographic Paper.

Originally promulgated in 1929, this recommendation established a simplified schedule to cut roll sizes of photographic paper. In 1930 the schedule was reaffirmed without change by the standing committee, and it was revised and reissued in 1936 as Simplified Practice Recommendation R98-36. The recommendation in its revised form was reaffirmed in 1939.

The current revision was undertaken with a view to establishing an up-to-date list of sizes which could be used by the Office of Price Administration in formulating a price regulation on photographic paper. As a result of this revision, the number of cut sizes for photo finishing, and for portrait and commercial use has been reduced from 62 to 52. In roll sizes for photo finishing, cirkut camera, and general use, there has been a reduction from 114 varieties to 87, on the basis of width, lengths, and weights of paper.

Until printed copies of this recommendation are available, mimeographed copies may be obtained without charge from the Division of Simplified Practice, National Bureau of Standards, Washington (25), D. C.

Plan Pulp Mill on Vancouver Island

[FROM OUR REGULAR CORRESPONDENT]

VANCOUVER, B. C., July 26, 1943—A comprehensive project involving pulp mill, by-product units and a reforestation program is planned by Bloedel, Stewart & Welch. Area involved is 150,000 to 200,000 acres now being logged by the company on the West Coast of Vancouver Island and the goal is full utilization of the stands in perpetuity.

S. G. Smith, vice-president of Bloedel, Stewart & Welch, one of the large operators of the west, said that Howard Simonds, engineer who recently completed a unit for Powell River Company, had been engaged to draw up the program.

As recently as 1939 company arrangements were made for an unbleached sulphite mill on the West Coast. Some machinery was purchased and foundations driven for a plant to handle 40,000 tons of pulp a year. Since then other usages for wood have developed and consideration is therefore being given to by-products plants as well. Mr. Simonds was on the work until the war halted it. Mr. Smith believes that at its normal cutting rate of 150 million board feet a year in the Port Alberni area, the present Bloedel, Stewart & Welch stands of timber should last 50 to 75 years. following that, trees seeded by the company since 1937 would be utilized. A perpetual cutting cycle is planned. It is believed other large logging companies in British Columbia are working on similar programs.

Permanent communities in logging centers are envisaged. Success of the plan would mark the end of "ghost town" era for many parts of British Columbia. Mr. Smith says some understanding will be sought with the Provincial Government for reduced ground charges in areas held for these operations and on logged-over lands where planting is being carried on. Ownership of the property will also be sought.

Paper Caution in Ceylon

WASHINGTON, D. C., July 26, 1943—A comprehensive control has been established on the distribution and use of paper in Ceylon under Government orders, says a report to the Department of Commerce.

One order restricts the size and use of posters, advertising in newspapers, and writing pads and prohibits the use of paper, unless previously cut to size for the purpose, for greeting cards, picture postcards, paper napkins, cleansing tissue, menu cards, calendars of specified sizes, programs, etc.

Forms, bill-heads, vouchers, note paper, etc., ordered subsequent to the regulation of January 16, were required to be executed in reduced sizes from previous orders, according to a schedule of sizes established for the purpose. The name and address of the printer was made obligatory at the foot of every form and the printer was required to submit a copy of every form printed, together with a sample of the previous order, to the Paper Controller as evidence of compliance with the regulations.

Written authorization from the Controller is required for sale of newsprint; its use for packing or as draft or scratch paper is prohibited. Allowances, payment, repayment or other consideration by publishers or proprietors of newspapers, by reason of copies of newspapers unsold, was prohibited in excess of 1 percent of the total number of copies printed and distributed.

Under the other order, retail traders in paper are required to be licensed by the Paper Controller. Purchases and sales are subject to permit.

Name Container Advisory Committee

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 21, 1943—Officers of the newly created Corrugated and Solid Fiber Container Industry Advisory Committee elected at the organizational meeting of the committee were announced today by the Office of Price Administration.

E. R. Hankins, president of the Hankins Container Corporation, Cleveland, was elected chairman of the committee, and P. A. Schilling, president of Waldorf Paper Products Company, St. Paul, Minn., was named vice-chairman.

The committee, which consists of twelve members, representing all sections of the country, will consult with and advise OPA on matters of price policy in connection with their industry, particularly with respect to Maximum Price Regulation No. 187 (Certain Paperboard Products) which establishes the ceilings of corrugated and solid fiber containers.

One of the first duties of this committee will be consideration of a revision of Maximum Price Regulation No. 187 to "spell out" the requirements of the regulation more clearly. Another matter to be taken up will be the setting up of reporting forms for giving cost data.

The committee follows: E. R. Hankins, president, Hankins Container Corporation, Cleveland, Ohio; C. W. Throckmorton, Jr., sales manager, Fibre Board Container Company, Richmond, Va.; P. A. Schilling, president Waldorf Paper Products Company, St. Paul, Minn.; R. O. Jones, assistant to president, Gaylord Container Company, St. Louis, Mo.; M. Norian, vice-president, Lanzit Corrugated Box Company, Chicago; R. H. Pollack, vice-president, Ajax Corrugated Paper Company, St. Louis, Mo.; Joseph Schiffenhaus, president, Schiffenhaus Brothers, Newark, N. J.; J. B. LeClere, president, F. J. Kress Box Company, Pittsburgh, Pa.; A. L. Rosenfeld, treasurer, Seaboard Container Corporation, Philadelphia, Pa.; Charles E. Frohman, vice-president, Hinde & Dauche Paper Company, Sandusky, Ohio; V. C. Hobbs, secretary, Fibreboard Products, San Francisco; and Irwin L. Soloman, president, American Corrugated Paper Products, New York.

Research on Lithographic Papers

Since 1930 the Lithographic Technical Foundation has sponsored a research program on lithographic papers at the National Bureau of Standards. Studies have been made to determine the properties most desirable in offset papers from the standpoint of lithographic production. These studies include determination of the causes of misregister, relation of paper properties to register, and the treatment of offset papers for optimum register.

Lastly, an extensive study was made of fiber selection and beater practice, and their relation to printing quality of offset papers. Seventy-three experimental papers were made in the Bureau's semi-commercial paper mill, using eleven different commercial pulps and various pulp combinations. Research Paper RP 1455, issued in March, 1942, covers chemical wood pulps, alone and in various mixtures. Research Paper RP 1532, issued in April, 1943, covers rag and rag-sulfite mixtures, and sulfite wood pulp with added mineral filler.

The data in RP 1532 shows that rag fibers respond to beating differently in some respects than wood fibers. Old rags withstood the prolonged beating required for the development of maximum strength and optimum formation without the adverse effects of such treatment noted in the preparation of wood fibers. All the rag-fiber papers had appreciably lower expansivity than wood-fiber papers of corresponding bond strength, and the mixture of old-rag fibers with strong sulphite, in equal proportions, produced papers with folding endurance approaching the average for the two pulps. Papers made of the sulphite pulp and wood-fiber filler pulp in like proportions have been found to have fold values little above that of the weaker pulps.

The addition of clay filler to a sulphite paper lowered the expansivity in the machine direction but did not lower it appreciably in the cross direction.

Copies of reprints of Research Paper RP 1532 can be obtained from the Lithographic Technical Foundation, Inc., 220 East 42nd street, New York, N. Y.

Capital City to Build Addition

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 24, 1943—The Capital City Container Corporation is making plans for construction of a new addition to its plant on Tivoli street, which will entail a large expenditure. The contract has been awarded to the Braun Construction Company. A preference rating order has been issued by the government to the company which manufactures corrugated paper boxes and other brands of containers. It is reported that products of the firms are used for war shipping purposes. The new annex will be of concrete block and steel, 34 by 88 feet, one story high, and will double the capacity of the present shipping room. It will be constructed in the rear and to the west of the existing shipping room and will have a number of shipping docks with loading platforms for truck accessibility.

News of the Boston Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 26, 1943—Stewart MacDonald, formerly associated with the Boston office of the Pejepscot Paper Company, Staff Sergeant on a Flying Fortress in the European Theatre of the war, was reported killed in action July 14. At one time he was with the New York office of the company. Last May, he was in Boston on a furlough. He was an efficient young man and well liked by his employers and others.

Richard Proctor, youngest son of Colonel Charles S. Proctor, Proctor Paper Company, Boston and Lowell, and associated with his father in business, has entered the service and is at Camp Devens.

The Century Paper Company, Inc., is distributing the new price list.

To Hold Packaging Conference Nov. 4

Packaging Institute, Inc., will hold its annual conference on November 4 and 5, 1943, at the Hotel New Yorker, N. Y., according to announcement by Joel Y. Lund, president of the Institute, and vice-president, Lambert Pharmacal Company, St. Louis, Missouri.

The conference will discuss technical wartime packaging problems, with particular reference to new technical developments in packaging resulting from changes in the war economy.

Urges Drive for More Pulpwood

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1943—Donald M. Nelson, chairman of the War Production Board, today requested the War Production Drive to lend its fullest assistance in stimulating the cutting of pulpwood for military and home front war uses as a continuing phase of its promotional program directly related to the production of all forest products listed as essential to victory.

"The Drive already has organized Lumber Victory Production Committees to increase production of wood for war," said Mr. Nelson. "Now pulpwood production is to become an integral part of the overall campaign.

"Since there is an increasingly critical shortage of pulpwood, the vital raw material for making smokeless powder, rayon for parachutes, and a multitude of containers for shipping ammunition, food, blood plasma and other supplies to our armed forces and allies, as well as for print papers for newspapers, magazines and books, the campaign to increase supplies of pulpwood is one of primary and immediate importance."

Mr. Nelson issued the statement following a conference with Walter M. Dear, chairman of the Newspaper Pulpwood Committee, recently appointed by the American Newspaper Publishers Association, on plans for an intensive newspaper pulpwood drive which will begin on August 1.

This campaign will follow the pattern of the memorable Newspapers United Scrap Metal Drive of last fall, which produced over six million tons of metal for war uses.

To Recondition Cartons

A determined effort to conserve essential U. S. paper supplies is seen in the recent announcement of The Sherwin-Williams Company that, starting July 16, 1943, a premium would be paid for each shipping carton returned to the company in usable condition. By thus effecting a reduction in the amount of paper used for shipping containers, the company hopes to make a substantial contribution to the government's paper conservation program. Realizing that the success or failure of its drive lies largely in the hands of the stock clerk, the company is now distributing an educational poster for display in the stockrooms of Sherwin-Williams' dealers. It urges conservation of cartons and shows how to open a carton without damaging it, how to collapse it and store it until shipped back to the company.

Reforestation in New York Lags

GLENS FALLS, N. Y., July 24, 1943—A decrease in New York State's distribution of young trees for reforestation purposes from 11,464,000 in the spring of 1942 to 7,900,000 for the same 1943 period is blamed by the State Conservation Department to the shortage of manpower. Statewide reforestation areas utilized were about a third of the 1942 total. However, the nurseries of the state at Lowville and Saratoga Springs distributed some 4,800,000 trees to individuals this year as against 4,676,000 in 1942. The department shipped more than a million trees to 4-H clubs and forestry enterprise members for separate programs conducted by these organizations.

Obituary

George E. Gibbs

George E. Gibbs, 66, of 14 Norfolk Row, Attleboro, Mass., vice-president and general manager of the American Reinforced Paper Company in Attleboro, died suddenly on July 18 while visiting with friends in Cambridge. Mr. Gibbs had been in apparent good health when he left his home Saturday. He was stricken suddenly by a cerebral hemorrhage.

He came to Attleboro about 15 years ago and was responsible in a large measure for the rapid growth of the paper company which has become one of Attleboro's most important manufacturing concerns. The growth of demand for the products of the company which makes building paper caused Mr. Gibbs to make trips in the past 10 years both to England and Australia to establish branches there for the production of the paper.

He is survived by a son, Herbert, and a daughter, Mrs. Albert Beneker, both of Attleboro.

William A. Wrase

William A. Wrase, 61 years old, of Chicago, vice-president and sales manager of the Central Paper Company, Inc., died early today at Sacred Heart Sanitarium, Milwaukee, Wis. He had been ill for about six weeks.

Recognized as a leader in the paper industry, particularly in sales methods and practices, Mr. Wrase had been associated with the Muskegon company for many years, and had been vice-president and sales manager since its reorganization in 1934.

Mr. Wrase leaves, besides his widow, two married daughters in Chicago and a son, William of the Naval Reserves attending Northwestern University Engineering School.

Paul L. Lewis

Paul L. Lewis, 65, of 503 Delaware avenue, a lifelong resident of Dayton, Ohio, and president of the Paul L. Lewis Paper Company, died at the residence on July 20.

He was a past master of Stillwater lodge, F. and A. M.; past high priest of Unity chapter, R. and A. M.; past master of Reese Council 9, R. and S. M.; past eminent commander of the Reed Commandery, K. T.; member of the Ancient Accepted Scottish Rite; Antioch Temple Shrine; Kiwanis Club and Grace M. E. Church. He was born in Osborn.

Mr. Lewis is survived by his widow, Elsie M.; four sons, Paul L. Lewis, Jr., Great Neck, L. I.; Thomas E., of Huntington Park, Cal.; Claude A., of Dayton, and Howard F., of Poland, Ohio; one brother, George B. Lewis, of Dayton; two sisters, Mrs. Daisy Bodiker and Mrs. Katherine Bodiker.

Hartford City Reduces Directors

INDIANAPOLIS, Ind., July 12, 1943—Officials of the Hartford City Paper Company, Hartford City, Ind., have filed papers with the Indiana secretary of state showing the number of directors reduced from seven to five. At the same time the officials filed an amendment to the corporation providing that the preferred stock shall be redeemed and cancelled.

New Jersey Regulates Facial Tissue

John F. Sinnott Jr., superintendent of the Department of Weights and Measures of the State of New Jersey, has issued the following regulation concerning facial and cleansing tissue:

On and after July 1, 1943, facial and cleansing tissues shall be sold by numerical count, and the quantity shall be declared on the wrapper or container in a plain and conspicuous manner.

The quantity declaration shall include a statement of the single sheet count and of the "tissue" count expressed in terms of the number of "plies" or single sheets comprising a "tissue," and the sheet size shall be specified.

Statements of sheet count and tissue count shall be equally prominent and of the same size lettering, and all three statements shall be in immediate juxtaposition, thus comprising a complete declaration.

Wherever, on a carton or label, a statement of sheet count is made, this shall be accompanied by the corresponding "tissue" count and the sheet size.

The term "sheet" as used herein shall mean the separate, individual sheet of tissue.

The term "tissue" shall mean whatever combination of individual sheets may comprise a "usable unit," "pull-out," or any combination dispensed from a container or removable from a roll or package in a single operation.

An example of a declaration conforming to the requirements of this Regulation is as follows: 500 single sheets, 250 two-ply tissues, size: 9x10 inches.

Similarly informative declarations shall be utilized on all packages of tissues covered by this Regulation.

Folded facial tissues shall be compactly folded and gaps between the edges of sheets shall be held to a minimum.

Cartons in which facial and cleansing tissues are packed shall not be larger than needed to hold their intended or represented contents.

The above regulation was promulgated under the provisions of Section 51:1-61 of the Revised Statutes relating to weights and measures, which reads as follows: "Rules for sale of commodities. The State Superintendent may make rules and regulations which shall govern the sale of commodities."

Charles C. Hoffman Retires

[FROM OUR REGULAR CORRESPONDENT]

HARRISBURG, Pa., July 26, 1943—Charles C. Hoffman, 76, 1337 North Front street, has retired from the Donaldson Paper Company after almost 62 years of continuous service in the business.

Starting as a card-cutter when he was 14 with Johnston and Company, Mr. Hoffman was general sales manager of the Donaldson Paper Company upon his retirement.

The Johnston firm was established on the ground floor of Shakespeare Hall, now the site of the Telegraph Building. When the company was dissolved Mr. Hoffman stayed with the late W. M. Donaldson and has been associated with the business under both father and son, J. Allan Donaldson, the present owner and manager.

Applying for retirement three months ago because of ill health, Mr. Hoffman was given a platinum wrist watch and band by his fellow employes when he left the office July 1.

We're in it for the duration

SINCE 1828
We have served the industry well, with the finest in Paper Mill Machinery.
NOW
our entire manufacturing facilities are engaged in turning out material for the mightiest and most formidable fighting machine our country has ever known.
While we cannot give you typical peacetime SW Service, we can supply you with replacements — under proper priority rating, of course.

THE SMITH & WINCHESTER
MANUFACTURING COMPANY
PLANT AND OFFICES AT SOUTH WINDHAM, CONNECTICUT

Specialty Papers Under Stricter Control

WASHINGTON, D. C., July 26, 1943 —The use of specialty papers in packaging and wrapping certain food stuffs, candy, tobacco, cosmetics and several other products, has been placed under stricter control by the War Production Board to conserve this type of paper for military and essential civilian uses. It is estimated that a saving of ten thousand tons of glassine, greaseproof and vegetable parchment paper a year, approximating 7¾ percent of annual consumption, will be effected by the current amendment to Conservation Order M-286.

Glassine, greaseproof and vegetable parchment papers are required for essential military and civilian uses, it was pointed out by the Pulp and Paper Division. Unfortunately, production of these specialty papers cannot be augmented because manufacturing equipment cannot be increased or expanded at this time without utilizing other essential war materials.

In addition to the need of glassine and greaseproof papers for packing food, they are required by the Army for wrapping ordnance items, for essential electrical insulation, and as special tracing paper. Vegetable parchment paper is also used extensively in food packaging as well as for interleaving in the production of rubber and plastics, liners for oil and ordnance paper containers, and certain other uses where wet strength characteristics are necessary.

Since the supply of these specialty papers continues to be inadequate to meet all essential demands, a number of items was added to the prohibited list included in Order M-286, effective July 23. It is felt that other less essential wrapping materials can be utilized for those products.

The restrictions do not apply to stocks in the hands of, or in transit to a user, or in the hands of a manufacturer or distributor and ready for a specific use, prior to July 23, 1943. This provision, the Pulp and Paper Division states, will offset any freezing of inventories and relieve many manufacturers with paper stocks in hand, who otherwise would be unduly handicapped.

After July 23, manufacturers may not use these specific protective papers in wrapping or packaging the following products: Sugar, flour, macaroni, noodles and similar paste goods; dried foods such as peas, beans, popcorn, rice, lentils and barley; unshelled nuts; whole spices, except cloves and mixed pickling spices; and drink powders, excluding milk, chocolate and cocoa in packages of a half pound or more. These papers are also prohibited from use in packing or wrapping cosmetics, dentifrices, toilet materials, soap; yarns, threads, twines and cordage, except when oil impregnated; household dyes, sponges, all foods for animals, insecticides, rotenticides and other pest control products, and smoker's supplies including pipes, lighters, cleaners, cigarette and cigar holders.

No canned or bottled goods may be packaged or wrapped in these special papers except that glassine paper may be utilized as a band to protect labels on drug and pharmaceutical containers.

The amendment places control over the three protective or specialty papers when used as second wraps or in conjunction with cellophane or similar transparent materials on the following: Tobacco, and tobacco products including cigarettes, chewing gum, candy and candy products, tea, coffee, potato chips and popcorn.

THE
APPLETON
MACHINE
COMPANY
OF
APPLETON, WISCONSIN

Announces
the appointment of

CASTLE & OVERTON, Inc.
ROCKEFELLER CENTER
630 FIFTH AVENUE, NEW YORK

as

Selling Agents

in the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, Pennsylvania, New Jersey, Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia and Florida.

New York To Organize for Fall Campaign

New York City's industries and trades will be organized for participation in this fall's nation-wide fund-raising campaign of the National War Fund under the leadership of James A. Farley, whose appointment as chairman of the Commerce and Industry Division of the New York Committee was announced last week by Emil Schram, citywide campaign chairman and president of the New York Stock Exchange.

The New York Commerce and Industry Division will be responsible for raising upwards of 50% of the five-borough goal of $17,000,000. This sum includes $14,875,000 or 11.9% of the national goal of $125,000,000, for support of the USO and 15 other national agencies serving our armed forces and war related needs of the United Nations.

While the national goal of $125,000,000 is the same as this Spring's Red Cross appeal nationally, the New York City quota is actually more than 30% higher than the local Red Cross quota due to the fact that funds must be provided for support of the New York City Defense Recreation Committee and the other war-related agencies under consideration for admission in the New York War Fund campaign.

In order to attain the local goal, it is estimated at least 2,500,000 separate gifts will be needed from individual and corporate givers, employee groups, clubs, societies and organizations. In addition, an army of between 150,000 and 200,000 volunteers will be required to canvass potential contributors.

Leaders and workers for each of more than 200 major divisions and subdivisions of commerce and industry will be enlisted during the summer and early fall in preparation for the active campaign which will get under way October 1 and continue until December 7, 1943. The Commerce and Industry phase of the appeal is scheduled to be launched November 1.

"We really started on the highroad to victory when the concept of the United Nations became a reality," said Mr. Farley in accepting the Commerce and Industry chairmanship. "With the launching of the National War Fund, we have taken another great step toward the same objective by bringing together under a single banner the major agencies serving our own armed forces, our merchant marine and our fighting Allies and their stricken people."

Besides the USO, the other agencies in the National War Fund are the United Seamen's Service, War Prisoners' Aid, Belgian War Relief Society, Inc.; British War Relief Society, Inc.; French Relief Fund, Inc.; Greek War Relief Association, Inc.; Norwegian Relief, Inc.; Polish War Relief, Inc.; Queen Wilhelmina Fund, Inc.; Russian War Relief, Inc.; United China Relief, Inc.; United Czechoslovak Relief Fund; United Yugoslav Relief Fund; Refugee Relief Trustees and U. S. Committee for the Care of European Children.

Bag Service Incorporates

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., July 26, 1943—Articles of incorporation have been filed with the Indiana secretary of state by the Bag Service of Illinois, Inc., Decatur, Ind., formed to manufacture and deal in paper, cotton and burlap bags. The corporation has 1,000 shares of no par value capital stock and the incorporators are S. W. McMillen, H. C. Offcutt and Elizabeth K. McMillen.

Name Folding Carton Committee

WASHINGTON, D. C., July 28, 1943 —Twelve representative members of the folding carton industry have been appointed to serve on a Folding Carton Industry Advisory Committee, the Office of Price Administration announced today.

This committee, representing all sections of the country, will consult with and advise OPA on matters of price policy in connection with the folding carton industry, and particularly with respect to Maximum Price Regulation No. 187 (Certain Paperboard Products) which establishes the ceilings of folding cartons sold by manufacturers.

An organizational meeting of the committee has been called for July 27, in Washington, D. C., when officers will be elected.

The committees follow: W. W. Fitzhugh, W. W. Fitzhugh, Inc., New York; R. S. Bloomer, Bloomer Brothers, Newark, N. Y.; W. P. Leavens, Jr., Wilkata Folding Box Company, Kearny, N. J.; W. D. Lynch, National Folding Box Company, New Haven, Conn.; L. Dalsemer, Lord Baltimore Press, Baltimore; Arthur J. Harris, Atlanta Paper Company, Atlanta; A. G. Ballenger, Morris Paper Mills, Chicago; M. G. Fessenden, Ace Carton Corporation, Chicago; C. M. French, Great Lakes Box Company, Cleveland; Ray Stilz, Paper Package Company, Indianapolis; Randall A. Ross, Hummel & Downing Company, Milwaukee; and V. C. Hobbs, Fibreboard Products, Inc., San Francisco.

Paper Demand Active

INDIANAPOLIS, Ind., July 26, 1943 —Demand for all kinds of paper and paper products continued heavy here this week with most of the difficulties of doing business as yet unsolved.

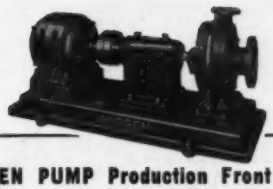
Box container factories appear to be hit worst in the labor shortage field. Much of the labor is of the unskilled variety and it is here that the chief difficulty is being experienced. All the factories in this section are carrying at frequent intervals, box displays in the classified sections of the newspapers appealing for help. It would seem that in addition to the losses of manpower to the armed services, many of the workers forsook the paper factories in the early days of the defense program because of considerably higher wages than the paper industry then was paying. Now these workers are frozen on their jobs, even if they wanted to leave.

Newspaper linage, while below that of last year, has held up surprisingly well in view of the fact that many of the larger advertisers now are in war production and have nothing to sell. Domestic advertising is slightly above that of a year ago, in spite of paper restrictions.

The last week saw a considerable volume of summer specialty business done. With laundries taking a couple of weeks to return bundles, business and housewives both have taken to substituting paper wherever possible. Napkins are in active demand.

Demand for waste paper and rags is increasing. Local warehouses are not heavily stocked and they are having difficulty in making collections due to tire and gasoline rationing, together with the fact that trucks are needing more repairs since they can not be replaced.

Mill buying of waste paper was heavy during the week. This was due generally to warnings that wood pulp would be very short. Rag buying also was brisk, both new cuttings and roofing rags being in demand.



Fighters on the WARREN PUMP Production Front . . No. 4 of a Series

"POP" BRINGS 30 YEARS OF SKILL TO EVERY JOB HE DOES

Chester B. Hathaway—("Pop", to us) has had 30 years of service with Warren Steam Pump Company, Inc.

"Pop" is a vertical turret lathe operator of such skill that he can speed up with the very best of them . . . and is an artist at work which calls for close tolerances.

It is the experience, skill and conscientious effort of "Pop" and his fellow Warren employees that make it possible for Warren Pumps to be "built to fit the job," without any compromise in quality. And it is the pride that these skilled men take in Warren Pumps that enable Warren equipment to perform, so faithfully, their important job in helping to win the war.

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC.

WARREN, MASSACHUSETTS

PAPER TRADE JOURNAL

This Reg. U. S. Pat. Off.

Henry J. Berger
EDITOR

Vol. 117 July 29, 1943 No. 5

COMING EVENTS IN PAPER INDUSTRY

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Fall Meeting, Palmer House, Chicago, September 21-24, 1943.

NEW ENGLAND SECTION. Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Roger Smith Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION. Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION. Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park, American Hotel, Kalamazoo, Mich.

POST-WAR PLANNING

As victory over the aggressor nations becomes clearer and definitely nearer with each important battle won, it seems plain that the old adage that to the victor belongs the spoils of conflict, must be radically altered and a more rational plan of building an enduring peace for all nations must be attempted. "The cessation of hostilities will leave a tremendous backlog of demand for consumer goods which will provide a basis for active business and employment," is one of the declarations of the Resolutions Committee recommended at the Thirty-first annual meeting of the Chamber of Commerce of the United States, held in New York last April. The declaration continues: "Private industry has always done advance planning. It should not emphasize such planning. New products, improved methods, lower costs, should produce public acceptance of a great mass of consumer goods."

Continuing, the declaration points out that, "In addition to the accumulated demand for consumer goods there will also be a backlog of requirements for needed and essential rebuilding and expansion of plants, new housing, and public works, the construction of which could not be carried out during wartime. Advance planning, the preparation of plans and specifications for such essential facilities to the point of readiness to let contracts should be encouraged. Public construction should be carried on through contracts with private enterprise in conformity with the principle that government should not engage in competitive enterprise and because experience has proven this method to be the most economical. Public construction in so far as practicable should be timed to be carried out during periods when private activity is at reduced levels."

Naming twelve problems which must be solved if the United States is to measure up to its opportunities after World War II, Henry H. Heimann, executive manager-on-leave of the National Association of Credit Men, declares in his monthly business review issued on July 15, that a victorious peace—one that means a better and more peaceful way of life—includes as a major factor the solution of our own peacetime problems. One of the most important problems, the credit chief says, is that of plant capacity which has been so largely extended during the war period. He points out that one-fifth of the total plant capacity of the nation is now owned or controlled by the government. This one-fifth represents an outlay on the part of the government equal to the valuation of the entire railway system in the United States. "The question here is, what is to become of these plants, who is to use, own or operate them, and to what use will they be put?" Mr. Heimann asks. He points out in this connection, however, that only about half of this government owned facility can be converted immediately for use in peacetime industry. The other half will eventually have to be absorbed or dismantled. Another problem he stresses is what will happen to the large stock pile of goods in process and the equipment such as machine tools, etc. He further warns that while we face an unemployment problem starting with Victory Day, we also face a problem of runaway inflation if there should be a sudden break in the huge dam that is holding back the demand for American goods."

In discussing how to avoid a wild scramble and consequent inflationary effect on the problem of replenishment in Europe, Mr. Heimann says in part: "For at least a few years after the war it is necessary for us to plan to live under a new tax economy, but when Victory Day comes, it is of great importance that every effort be made to reduce the cost of government—national, state and county, to a minimum. The bureaucracy developed during the war will have to be liquidated. This nation cannot stand, in peacetime, the costs of government it is now assuming because the carrying charges on our debt will of itself be a heavy load. There is need for careful study of conservation programs to guard raw materials so sorely needed by the war demands. Rich as we are, we do not have an inexhaustible supply of raw materials and a more vigorous program is an essential after the war. There is need of sound credit management in all of its phases; for the post-war period will be dependent on sound credit more than on any other factor. This means sound credit programs internationally, nationally, in business and among individuals."

Concluding, Mr. Heimann states: "We need to define a sound and constructive policy among nations to avoid some of the evils of the nationalistic policies of the past post-war period. The solution of this

problem is as important as any of those preceding if we are to have a safe and healthy world in which to live. It is undoubtedly true that for a long time we, as a nation, must take a very active administrative part in some of the world's affairs. I have tried not to present a plan of action to solve these problems, as no human being could do so at this time. Instead I have listed some of the problems we and the rest of the people in the world will face. If enough people study them and discuss them it is likely our solution will be more nearly in line with our common objective—a better world in which to live."

Kempton Clark Leaves OPA

[FROM OUR REGULAR CORRESPONDENT]

Kempton Clark has left the Office of Price Administration, Washington, D. C., his resignation taking effect July 25, and has become associated with the George O. Jenkins Company as mill manager. This company operates two leatherboard mills at Bridgewater, Mass.

Mr. Clark has been with the OPA since April, 1942, in the Paper and Paper Products Branch as senior business analyst handling specialty paperboard. Since graduating from Yale in 1925, he has been in the paper businesss starting with Hollingsworth & Vose Company immediately after graduation and working in their East Walpole mill until the end of 1928. From then until he became connected with the OPA he was with the American Seal-Kap Corporation at Long Island City in charge of the company's paper and paper products' research and development. Mr. Clark is a member of the Technical Association of the Pulp and Paper Industry.

Production Ratio Report*

(Production as per cent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

Current Weeks—1943		Corresponding Weeks—1942	
June 12	88.4	June 13	88.4
June 19	87.5	June 20	86.5
June 26	88.1	June 27	84.5
July 3	85.6	July 4	67.6
July 10	67.1	July 11	69.7
July 17	*87.6*	July 18	81.5

(Holiday July 4)

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July
1942	104.5	103.9	102.9	100.4	95.3	87.4	75.8
1943	87.2	88.9	89.5	88.7	91.5	*85.8*	

Year	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1942	80.8	82.8	90.6	86.9	80.1	90.4
1943	....	....	....	....	....	....

COMPARATIVE YEARLY SUMMARIES

	1936	1937	1938	1939	1940	1941	1942	1943
Year to Date	77.7	88.0	67.4	78.6	86.7	93.1	96.3	*88.1*
Year Average	80.4	79.8	71.5	83.4	85.6	97.4	90.4	....

* Based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

PAPERBOARD OPERATING RATIOS†

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1937	83	89	89	91	88	80	69	77	72	70	57	47	75
1938	56	63	63	60	60	59	59	60	70	73	67	61	64
1939	65	73	76	74	69	73	68	77	82	91	88	77	77
1940	78	75	74	76	82	85	77	79	78	85	82	77	78
1941	81	88	89	89	91	94	92	98	95	99	98	90	92
1942	102	101	101	95	82	72	68	75	76	81	82	77	84
1943	86	88	94	94	96	*94*							

Week ending June 12, 1943—97
Week ending June 19, 1943—95
Week ending June 26, 1943—96
Week ending July 3, 1943—92
Week ending July 10, 1943—69
Week ending July 17, 1943—*91*

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Assn.

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UFORMITE 449 for improving wet-strength of paper, through tub sizing operations.

UFORMITE 412-A, a urea formaldehyde resin for laminating work.

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Section of the
TECHNICAL ASSOCIATION
OF THE PULP & PAPER INDUSTRY

Edited by R. G. Macdonald, Secretary

United States Patents on Papermaking

Second Quarter, 1943

Compiled by Clarence J. West, Chairman, Committee on Abstracts and Bibliography; TAPPI

The following list of patents has been compiled from the current numbers of the Official Gazette of the United States Patent Office. Because, as a rule, only one claim is published in the Gazette, it is not claimed that the list is complete; also, it is possible that the list may contain some patents which do not apply to pulp and paper manufacture.

Copies of any of the following patents may be obtained from the U. S. Patent Office, Washington, D. C., by sending ten cents for each patent desired. The number, name of the inventor, title of the patent, and date should be given in the request. Personal checks and stamps are not accepted in payment for patents. Books of coupons may be purchased for two or ten dollars good for 20 or 100 patents. Coupon orders do not have to be accompanied by letters of transmittal. They require nothing but the filling in of the patent number, the name of the inventor, the date of issue, and the name and address of the party desiring the service.

April 6, 1943

2,315,536. Classification method and apparatus. Harry L. McNeill, Denver, Colo. Filed Aug. 10, 1939. 15 claims. (Cl. 209-157).

2,315,584. Tall-oil refining. Joseph N. Borglin, assignor to Hercules Powder Company, Wilmington, Del. Filed Aug. 16, 1941. 14 claims. (Cl. 260-97.5). The tall oil in liquid phase is treated with oxalic acid.

2,315,591. Paper dish and base therefor. Herman Carew, assignor to Dixie-Vortex Company, Chicago, Ill. Filed Aug. 26, 1940. 3 claims. (Cl. 65-15).

2,315,615. Molded article. Henry C. Guhl, assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. Filed July 24, 1940. 5 claims. (Cl. 154-45.9). A molded panel comprising a base portion composed of a plurality of laminated sheets of kraft paper impregnated with a resinous binder and a surface sheet of alpha pulp paper impregnated with a resinous binder, the two being consolidated under heat and pressure.

2,315,635. Powder container. John W. McCarthy and Herve C. Holly, assignors to F. N. Burt Company, Inc., Buffalo, N. Y. Filed Jan. 29, 1941. 16 claims. (Cl. 93-39.1).

2,315,646. Sheet feeding apparatus. Abraham Novick, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed Jan. 21, 1941. 18 claims. (Cl. 271-29).

2,315,675. Sizing of paper. Ernst Trommsdorff, assignor to Rohm & Haas Company, Philadelphia, Pa. Filed Aug. 15, 1940. 3 claims. (Cl. 92-21). In beater sizing of pulp with resins and waxes, there is added, prior to web formation, 0.3-0.5% of a water-soluble salt of a copolymer of which methacrylic acid is the predominating component.

2,315,776. Formaldehyde-urea adhesive. William C. Dearing and Kenneth D. Meiser, Toledo, Ohio. Filed May 14, 1940. 7 claims. (Cl. 260-9). A suspension of one part of cellulosic particles (less than 0.02 mm. in diameter) in an aqueous solution containing three parts of a formaldehyde-urea reaction product.

2,315,892. Process of manufacturing paper and board. Levis M. Booth, Plainfield, N. J. (Alice L. Booth, executrix). Filed April 6, 1939. 14 claims. (Cl. 92-21). Method of making paperboard containing at least three inner filler plies on a multicylinder machine, which consists in adding to streams of stock which are to comprise the inner plies different amounts of aluminum sulphate and hydrated lime to form different amounts of an insoluble reaction product, the stock containing the greater amount of insoluble reaction product forming the inner portion of the board.

2,315,973. Method of preparing cellulose for esterification. Carl J. Malm, assignor to Eastman Kodak Company, Rochester, N. Y. Filed May 9, 1939. 4 claims. (Cl. 260-229).

2,315,974. Method of coating. Carl J. Malm and Gerard J. Clarke, assignor to Eastman Kodak Company, Rochester, N. Y. Filed Nov. 10, 1939. 4 claims. (Cl. 117-85). A method of applying a flexible, strongly adhering coating comprising a thin layer of cellulose ester and 20% of a nonresinous plasticizer and then at least one overcoating of cellulose acetate.

2,316,037. Treatment of cellulosic materials. Clifford C. Wilcock and Charles P. Tattersfield, assignors to Courtaulds Limited, London, England. Filed March 11, 1941. 4 claims. (Cl. 117-161). The material is treated with a substance selected from the group consisting of a paraffin wax, ceresin wax, Japan wax, beeswax, spermaceti, stearic and palmitic acids and 0.5-6% of a condensation product of cyanamide and formaldehyde.

2,316,054. Perforating apparatus. Clyde O. Davis and William S. Pilcher, assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed May 20, 1942. 1 claim. (Cl. 164-99).

2,316,093. Insulating covering. Arthur D. MacNutt, assignor to Certain-Teed Products Corporation, New York., N. Y. Filed Dec. 5, 1936. 20 claims. (Cl. 108-7). A roofing sheet comprises a weather-resisting web having laminated thereto a dry web of mineral wool fibers.

2,316,099. Linoleumlike products. Frederick Myers, assignor to The Resinous rPoducts & Chemical Company, Philadelphia, Pa. Filed July 5, 1941. 3 claims. (Cl. 117-64).

2,316,120. Decalcomania paper. John MacLaurin, assignor to McLaurin-Jones Co., Brookfield, Mass. Filed Aug. 11, 1939. 7 claims. (Cl. 117-36). The improvement consists in a method of applying a decalcomania adhesive to the backing sheet.

April 13, 1943

2,316,202. Method for coating paper. Edgar Warner, assignor to The Champion Paper and Fibre Company, Hamilton, Ohio. Filed July 31, 1940. 8 claims. (Cl. 117-102). The paper and coating are pressed between two cylindrical surfaces, a backward flowing pool of coating material is maintained immediately in advance of the nip between the said surfaces, and the coating material is kept in contact with one of the surfaces until it is substantially hardened.

2,316,258. Production of softening agents. Paul Kümmel, Oranienburg, Germany; vested in the Alien Property Custodian. Filed Feb. 24, 1940. 8 claims. (Cl. 252-1). A softener for paper products consists of a solution of salt of the alkali metal glycolates or lactates and of a minor portion of water-soluble oxypolyalkyl ether.

2,316,274. Coating and production of coated structures. James A. Mitchell, assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed June 16, 1937. 18 claims. (Cl. 260-17). The composition consists of 3 parts of cellulose nitrate, 5 parts modified rosin, 1.5 parts dibutyl phthalate, 0.5 part paraffin wax, 0.5 part benzoyl peroxide, and 52 parts of cyclohexyl methacrylate.

2,316,323. Vinyl resin coating composition. Arthur K. Doolittle, assignor to Carbide and Carbon Chemicals Corporation, New York, N. Y. Filed Nov. 17, 1939. 5 claims. (Cl. 260-32). A polymerization product of a vinyl halide and a vinyl ester of an aliphatic acid and a solvent having marked compatibility for coal-tar hydrocarbons.

2,316,378. Apparatus for determining the tendency of paper to curl. George S. Witham, Jr., assignor to W. & L. E. Gurley, Troy, N. Y. Filed Oct. 23, 1940. 10 claims. (Cl. 73-51).

2,316,467. Process of forming laminated products. Oswald C. H. Sturken, assignor to Corn Products Refining Company, New York, N. Y. Filed May 22, 1939. 4 claims. (Cl. 154-40). Sheets of fibrous material impregnated with bitumens and waxes are dipped into a zein solution and united by pressure.

2,316,496. Process for producing nonsticking, smooth, flameproofed, thin, flexible sheeting. William D. White, assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed July 23, 1940. 1 claim. (Cl. 117-145). Gel regenerated cellulose in sheet form is passed through an aqueous bath of 7% ammonium sulfamate, 1.5% glycerol, and an emulsion containing carnauba wax, stearic acid, morpholine, shellac, an alkyl benzene and water.

2,316,499. Tall-oil refining. Joseph N. Borglin, assignor to Hercules Powder Company, Wilmington, Del. Filed Aug. 16, 1941. 16 claims. (Cl. 260-97.5). The tall oil in liquid phase is subjected to the action of an aqueous silicofluoride solution.

2,316,531. Sizing and coating apparatus. Walter A. Nivling (L. E. Nivling and O. C. Nivling, Newton Center, Mass., administrators). Filed Dec. 14, 1940. 9 claims. (Cl. 91-50). A coating machine for applying liquid to a moving web.

April 20, 1943

2,316,891. Impervious fabric and seam. William W. Rowe, assignor to Cincinnati Industries, Inc., Lockland, Ohio. Filed Oct. 10, 1941. 9 claims. (Cl. 154-42). A method of applying a solvent to a waterproof material composed tof two layers joined by a waterproof adhesive so as to form a seam.

2,317,209. Impregnated fibrous materials. Wilbert B. McCluer, Ralph W. Hufferd and Frank J. Philippbar, assignors to Kendall Refining Company, Bradford, Pa. Filed Aug. 3, 1940. 6 claims. (Cl. 117-158). Fibrous material is impregnated with a chemical condensation product derived from a high molecular weight viscous material which has been precipitated from a paraffin base oil residuum in a normally gaseous hydrocarbon solvent.

April 27, 1943

2,317,371. Coating and decorating composition. Albert E. Gessler and David M. Gans, assignors to Interchemical Corporation, New York, N. Y. Filed June 6, 1940. 6 claims. (Cl. 260-22). The composition consists of copper phthalocyanine dispersed in a heat-convertible synthetic resin dissolved in a liquid pine terpene.

2,317,394. Process of making hardboard. William H. Mason and Robert M. Boehm and George G. Simpson, assignors to Masonite Corporation, Laurel, Miss. Filed Nov. 18, 1939. 2 claims. (Cl. 92-39). A lignocellulosic sheet is dried and subjected to a pressure of at least 500 pounds per square inch in a platen press between pressing surfaces heated to a temperature over 200 degrees C. for a sufficient time to

activate the self-bonding properties of the fibers a second time and produce a superior hard fiberboard.

2,317,396. Process for separating calcium values from magnesium values. James A. Murray, assignor to Warner Company, Devault, Pa. Filed Jan. 26, 1940. 4 claims. (Cl. 23-66). Hydrogen sulphide is the reagent used for the separation.

2,317,436. Color-coating cellulosic materials. Ernest R. Buller, Howard E. Hanthorn and Robert H. Treadway, assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Oct. 18, 1940. 9 claims. (Cl. 117-152). A surface coating agent for cellulosic material comprises at least a 0.5% dye dispersion in an alkali silicate.

2,317,443. Process for making chlorine dioxide and for separating the same from chlorine. George L. Cunningham, assignor to The Mathieson Alkali Works, Inc., New York, N. Y. Filed May 1, 1940. 7 claims. (Cl. 23-152).

2,317,504. Artificial fiber board. Henry E. Walter, assignor to Wood Conversion Company, Cloquet, Minn. Filed Feb. 3, 1940. 5 claims. (Cl. 41-24). The surface fibers of a board to be used as a wainscoating is impregnated with a dried oil.

2,317,596. Method of making roofing. Albert C. Fischer, assignor to The Philip Carey Manufacturing Company, Lockland, Ohio. Filed July 20, 1931. 11 claims. (Cl. 154-2). A method of producing shingles tapering in thickness and having a felted fibrous foundation containing waterproofing material.

2,317,650. Coated abrasive. Herbert R. Stratford, assignor to The Stratmore Company, Wilmington, Del. Filed May 22, 1939. 4 claims. (Cl. 51-298). A disc of felted cellulose, a granular abrasive coating, and a waterproof adhesive agent, the sheet being impregnated with a synthetic resin.

2,317,696. Process for imparting greaseproof characteristics to paper. Edward D. Rich, Tacoma, Wash. Filed May 13, 1942. 1 claim. (Cl. 117-86). Paper is coated with a solution containing 5-20% by weight of a reduced viscosity starch, 1-10% of glycerin, and 0.5-2% of methylcellulose, dried, then coated with a solution containing 1-10% of methylcellulose and 1-5% of glycerin, and again dried.

2,317,725. Coating agent. Kurt Billig, Frankfort-on-the-Main, Germany; vested in the Alien Property Custodian. Filed Sept. 24, 1938. 1 claim. (Cl. 260-32). Use is made of the ammonium salt of an interpolymerization product of about 90-98% of vinyl acetate with about 2-10% of crotonic acid.

2,317,730. Laminated sheet material. William C. Calvert, assignor to Marbon Corporation, Gary, Ind. Filed Aug. 25, 1939. 2 claims. (Cl. 154-50). A sheet of paper is coated with an elastic composition comprising a major portion of rubber and a minor proportion of a wax, a porous sheet is laminated to the elastic composition and a heat-sealing composition is bonded throughout the porous paper to the rubber-wax composition.

2,317,752. Modified starch. Arthur D. Fuller, assignor to National Starch Products, Inc., New York, N. Y., Filed Oct. 30, 1939. 5 claims. (Cl. 127-33). Starch is treated in an aqueous suspension with a chlorine oxidizing agent in the presence of a nitrogenous body; this gives a short, smooth, and viscosity-stable paste.

2,317,789. Facsimile reception medium. Robert H. Marriott, assignor the Finch Telecommunications, Inc., New York, N. Y. Filed Feb. 9, 1940. 6 claims. (Cl. 117-152). A reproduction paper comprises a backing and a heat sensitive coating, which forms bubbles on heating.

2,317,797. Method of treating tall oil and product obtained thereby. Anthony F. Oliver and Robert C. Palmer, assignors to Newport Industries, Inc., Pensacola, Fla. Filed April 5, 1940. 4 claims. (Cl. 260-97.5). A method is described for desulphuring tall oil by heating 8-10 hours at 260-325 degrees C. and treating with a heavy metal at a temperature above 150 degrees to precipitate the sulphur compounds.

2,317,832. Manufacture of reaction products from sulphite cellulose waste liquor. Fritz Vorsatz, Ludwigshafen-on-the-Rhine, Germany; vested in the Alien Property Custodian. Filed May 7, 1940. 5 claims. (Cl. 260-124). Sulphite waste liquor is heated with water-insoluble organic compounds containing halogen atoms attached to the alkyl groups and sufficient alkali is added to neutralize the liquor and bind the halogen, the conversion product being precipitated with acid.

2,317,891. Waterproof adhesive composition. Brook J. Dennison, assignor to Pittsburgh Plate Glass Company, Allegheny County, Pa. Filed June 9, 1939. 6 claims. (Cl. 260-32). A mixture of vinyl acetate resin and a partially hydrolyzed alkyl ester of silicic acid.

2,317,910. Drier felt. Harold N. Hill, assignor to Asten-Hill Mfg. Co., Philadelphia, Pa. Filed Jan. 17, 1941. 8 claims. (Cl. 139-408). A method of manufacturing an asbestos drier felt.

May 4, 1943

2,318,056. Winding apparatus. Peter J. Christman, Green Bay, Wis. Filed April 1, 1940. 8 claims. (Cl. 242-50).

2,318,096. Transfer sheet. Frederick A. Quick, assignor to All Purpose Gold Corporation, Brooklyn, N. Y. Filed Sept. 4, 1940. 7 claims. (Cl. 117-36). A carrier sheet is coated with shellac gum and sandarac gum, plasticizers and pigments, dried and then coated with shellac gum and Pontianak gum with plasticizers, and again dried.

2,318,121. Aminotriazine-aldehyde binding agent. Gustav Widmer and Willi Fisch, assignors to Ciba Products Corporation, Dover, Del. Filed July 27, 1937. 3 claims. (Cl. 260-9). A waterproof adhesive consists of a melamine-formaldehyde condensation product, starch, and an ammonium salt capable of producing acid, in aqueous dispersion.

2,318,126. Latex adhesive. Louis Spraragen, assignor to Angier Products, Inc., Cambridge, Mass. Filed Aug. 13, 1940. 9 claims. (Cl. 260-739). The adhesive consists of an aqueous dispersion of rubber containing up to 25% of a lower alkyl ester of crotonic acid.

2,318,173. Means for cutting sheets of different lengths from traveling webs. Hans J. Luehrs, assignor to C. B. Cottrell & Sons Company, Westerly, R. I. Filed July 4, 1942. 14 claims. (Cl. 164-66). A pair of rotary cutters.

2,318,184. Laminated sheet and method of producing same. Floricel A. Rojas, assignor of one-half to Walter H. Liebman, New York, N. Y. Filed Jan. 18, 1936. 12 claims. (Cl. 154-40). A method of connecting sheet aluminum with a sheet of cellulosic material.

2,318,272. Method of producing linoleum products. William C. Weigle and James W. Kemmler, assignors to Sloane-Blabon, Trenton, N. J. Filed Aug. 22, 1941. 14 claims. (Cl. 154-25). The manufacture of a substantially inelastic sheet of impregnated felt which comprises the step of cushioning the sheet of felt while calendering a linoleum composition onto one face thereof.

2,318,302. Process of and composition for waterproofing permeable material. Constantine F. Fabian and James B. Lee, assignors to Lee Bros. Hats, Inc., Danbury, Conn. Filed Oct. 11, 1939. 14 claims. (Cl. 106-268). A waterproofing composition consists of a gel from a hydrocarbon and an aluminum salt of a fatty acid (oleic, palmitic, stearic) dispersed in an aliphatic ether.

2,318,368. Spraying device for paper machines. Arthur E. Broughton, Glens Falls, N. Y. Filed April 14, 1939. 1 claim. (Cl. 92-50). A spraying device for a rotary cylindrical screen having one closed end.

2,318,504. Doctor operating mechanism for rolls and cylinders. Frederick W. Lodding, Worcester, Mass. Filed Dec. 9, 1938. 4 claims. (Cl. 92-74).

May 11, 1943

2,318,663. Composition and method for treating boiler water to prevent caustic embrittlement. Paul G. Bird, Wilson Evans, Carlyle Harmon and Jörgen R. Salvesen, assignors to Marathon Paper Mills Company, Rothschild, Wis., and National Aluminate Corporation, Chicago, Ill. Filed March 4, 1941. 13 claims. (Cl. 210-23). The composition for the treatment consists of an alkali or alkaline earth metal sulphite and an alkali or alkaline earth lignin sulphonates or sulphite cellulose waste liquors.

2,318,780. Coating composition. James W. Humphrey, assignor to American Viscose Corporation, Wilmington, Del. Filed Oct. 18, 1940. 4 claims. (Cl. 260-42). A coating composition consists of approximately two parts of polymerized butyl methacrylate, one part of copolymers of vinyl chloride and vinyl acetate, and 0.75 parts of chlorinated diphenyl.

2,318,919. Treatment of waste liquor. Charles J. Brockman, Athens, Ga. Filed Oct. 4, 1938. 2 claims. (Cl. 210-2). To render black liquor relatively innocuous and suitable for discharge into natural waters, it is acidified with sulfuric acid at about 65° C., diluted with 2-4 volumes of water, lime water containing 3-5% of calcium oxide is added until it is alkaline to litmus, and filtered.

2,318,937. Cutting and sorting of paper and like sheets from continuous webs. Philip T. Goldney, Dartford, and Alfred G. Hingley, Bristol, England. Filed June 24, 1941. 16 claims. (Cl. 164-68). An apparatus for cutting a continuous web into sheet form and simultaneously separating defective sheets.

2,319,099. Container-making machine. Alvin A. Abramson and Carleton Manthey, assignors to Central States Paper & Bag Company, St. Louis, Mo. Filed Nov. 25, 1940. 9 claims. (Cl. 18-19). A method of making a container from a flexible strip of transparent material.

2,319,116. Paper and method of making same. Lloyd L. Dodge, assignor to Rhinelander Paper Company, Rhinelander, Wis. Filed March 1, 1939. 8 claims. (Cl. 92-39). A sheet of paper is impregnated with petrolatum and coated with a paraffin wax having a lower melting point than the petrolatum.

2,319,133. Cross current cylinder type papermaking machine. Lloyd Hornbostel, assignor to Beloit Iron Works, Beloit, Wis. Filed Oct. 19, 1939. 6 claims. (Cl. 92-43).

May 18, 1943

2,319,242. Apparatus for coating. Samuel Lipsius, New York, N. Y. Filed May 2, 1940. 19 claims. (Cl. 91-50). An apparatus for coating with a hot-melt type quick-setting material.

2,319,267. Individual multilayer fibrous resin-bearing article. Edward E. Sawyer, assignor to The Canal National Bank of Portland, Maine. Filed May 14, 1941. 2 claims. (Cl. 229-25)

2,319,382. Apparatus for saturating roofing felt. Clarence E. Wilkinson, assignor to The Texas Company, New York, N. Y. Filed July 24, 1941. 5 claims. (Cl. 91-18).

2,319,389. Coating composition. Frank W. Corkery and Samuel G. Burroughs, assignors to Pennsylvania Industrial Chemical Corporation, Pittsburgh, Pa. Filed July 16, 1940. 5 claims. (Cl. 260-28). A homogeneous mixture of paraffin wax and thermoplastic resin.

2,319,399. Apparatus for the recovery of chemicals from black liquor. Alexander L. Hamm, assignor to Combustion Engineering Company, Inc., New York, N. Y. Filed Oct. 19, 1940. 5 claims. (Cl. 122-235). A smelter furnace, etc., for a self-sustaining system for recovering chemicals and generating steam from black liquor.

2,319,474. Machine for cooling coated containers. John F. Price, assignor to Oswego Falls Corporation, Fulton, N. Y. Filed April 23, 1942. 7 claims. (Cl. 62-104).

2,319,476. Coating machine. Don Ray, Los Angeles, Calif. Filed Jan. 6, 1939. 4 claims. (Cl. 91-30).

2,319,697. Chemical manufacture. James D. MacMahon, assignor to The Mathieson Alkali Works, Inc., New York, N. Y. Filed June 24, 1939. 10 claims. (Cl. 252-187). A calcium hypochlorite solution contains 0.5-20% by weight (on the hypochlorite) of sodium tetraphosphate.

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2,319,800. Means and method for improving the quality of paper. Jess R. Denton, assignor to Ecusta Paper Corporation, Pisgah Forest, N. C. Filed April 21, 1941. 9 claims. (Cl. 92-48). In the production of laid, relatively thin paper, the combination of a perforate woven surface processing roll for first smoothing the web and a laid dandy roll to provide the laid designs therein.

2,319,852. Coating composition. Arthur K. Doolittle, assignor to Carbide and Carbon Chemicals Corporation, New York, N. Y. Filed Feb. 2, 1939. 12 claims. (Cl. 260-32). A method of preparing an emulsion of a polymer of vinyl halide and vinyl ester.

2,319,883. Water soluble adhesive. Bradford S. Ritchie, assignor to Ralph W. E. Leach, Winchester, Mass. Filed Nov. 7, 1940. 5 claims. (Cl. 166-123). The adhesive consists of a water-soluble concentration of acid blow-down liquid of the sulphite process, a hygroscopic agent and a sodium phenylphenate salt.

2,319,901. Vibrating screen. Jesse P. Hall, assignor to Industrial Patents Corporation, Chicago, Ill. Filed Oct. 11, 1939. 6 claims. (Cl. 209-269). A classifier.

2,319,951. Thermoplastic lignocellulosic product and method of making the same. Arlie W. Schorger, assignor to Burgess Cellulose Company, Freeport, Ill. Filed Jan. 24, 1940. 12 claims. (Cl. 260-10). A material which is plastic during hot molding operations comprises a compound of lignocellulose and a phenol.

2,319,952. Thermoplastic lignocellulosic product and method of making the same. Arlie W. Schorger, assignor to Burgess Cellulose Company, Freeport, Ill. Filed Feb. 19, 1940. 11 claims. (Cl. 260-10). A dense, black, thermoplastic, resinous molded product comprises the condensation product of a lignocellulose and phenol.

2,319,957. Coated paper. John K. Speicher, assignor to Hercules Powder Company, Wilmington, Del. Filed Sept. 11, 1941. 6 claims. (Cl. 117-157). A coating of ethylcellulose and wax forms a moisture- and scuff-resistant nontacky surface.

2,319,959. Adhesive. Hubert J. Tierney, assignor to Minnesota Mining & Manufacturing Company, St. Paul, Minn. Filed Feb. 19, 1941. 10 claims. (Cl. 260-4). An adhesive consists of a polyisobutylene elastomer and a pale solid hydrogenated resin (hydrogenated indene resins, coumarone resins, dicyclopentadiene resins, and combinations thereof) combined in proportions to form a normally tacky and pressure-sensitive adhesive coating.

2,319,966. Molded pulp article. Guy S. Wood and Ralph A. Farnham, assignors to International Paper Company, New York, N. Y. Filed May 11, 1940. 3 claims. (Cl. 229-14). A wrapper formed from molded pulp for use in packaging generally cylindriform articles.

2,320,139. Flexible abrasive article. Henry P. Kirchner, assignor to Carborundum Company, Niagara Falls, N. Y. Filed Jan. 23, 1941. 10 claims. (Cl. 51-195). The backing consists of a layer cloth, one of kraft paper (slightly hydrated) and a base layer of highly hydrated compressed cellulosic fibers.

2,320,294. Sulphite process. George V. Palmrose and Donald K. MacBain, assignors to Weyerhaeuser Timber Company, Longview, Wash. Filed April 23, 1940. 2 claims. (Cl. 92-11). A cyclic method of treating lignocellulosic material which comprises pulping the material with a solution of magnesium bisulphite containing a substantial excess of free sulphur dioxide and a method of recovering the waste liquor.

2,320,301. Preparation of a urea-formaldehyde adhesive. Paul O. Powers, assignor to Armstrong Cork Company, Lancaster, Pa. Filed June 8, 1939. 3 claims. (Cl. 260-69).

2,320,326. Manufacture of heated sealed bags. True M. Avery, assignor to Union Bag & Paper Corporation, Hudson Falls, N. Y. Filed April 29, 1940. 18 claims. (Cl. 93-18).

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2,320,513. Machine for coating absorbent surfaces. Folsom E. Drummond, assignor to New Wrinkle, Inc., Wilmington, Del. Filed Sept. 24, 1941. 12 claims. (Cl. 91-18).

2,320,598. Process for the manufacture of distillable oils from wood and other plant materials. Harold Hibbert and Archibald B. Cramer, Montreal, Quebec, Canada. Filed Dec. 14, 1938. 1 claim. (Cl. 260-124). A method is proposed for converting lignin constituents of ligno-cellulose into distillable liquid and crystalline products by treating it with absolute-ethyl alcohol in the presence of anhydrous hydrogen chloride for 12-48 hours and separating the aldehyde, phenol, and neutral compound by fractional distillation.

2,320,635. Manufacture of high test bleach. Francis C. Mericola and Howard F. Roderick, assignors to Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Jan. 23, 1940. 21 claims. (Cl. 23-86). The method consists in chlorination of a solution of basic and normal calcium hypochlorite and separation of the precipitated normal hypochlorite.

2,320,652. Machine for cutting and folding tissue. Harry Preston, assignor to San-Nap-Pak Manufacturing Company, Inc., New York, N. Y. Filed Aug. 5, 1941. 20 claims. (Cl. 270-40).

2,320,656. Web roll changing. Oscar C. Roesen, assignor to Wood Newspaper Machinery Corporation, Plainfield, N. J. Filed July 22, 1941. 27 claims. (Cl. 242-58). A web roll arranged for making a high speed splice.

2,320,657. Web roll splicing method and apparatus. Oscar C. Rosen, assignor to Wood Newspaper Machinery Corporation, Plainfield, N. J. Filed Aug. 6, 1941. 14 claims. (Cl. 242-58).

2,320,658. Web roll replacement. Oscar C. Roesen, assignor to Wood Newspaper Machinery Corporation, Plainfield, N. J. Filed Jan. 13, 1942. 10 claims. (Cl. 242-58).

2,320,693. Duplex photographic material. Edwin C. Yauck and John Dessauer, assignors to The Haloid Company, Rochester, N. Y. Filed Jan. 8, 1941. 1 claim. (Cl. 95-8). The paper support for the photographic layer contains 50% more white pigment than pure white paper normally contains.

2,320,702. Apparatus and method for making composition material. John Marchese, Los Angeles, Calif., and Stanley J. Selden, Tacoma, Wash., assignors to Process Holdings Company. Filed Oct. 26, 1939. 8 claims. (Cl. 154-1). An apparatus for making sheet material from a fluid mix.

2,320,737. Sound damping insulation and process of manufacture. Henry B. Hutten, assignor to The Rubberoid Co., New York, N. Y. Filed June 22, 1939. 7 claims. (Cl. 154-28).

2,320,771. Paper sizing. Paul B. Davidson, assignor to Strahtmore Paper Company, West Springfield, Mass. Filed Dec. 19, 1939. 6 claims. (Cl. 106-135). A paper sizing contains 3.5-8.5% of animal glue, an alkali, 0.5% borax, and 0.25-1.25% of bentonite; the solution has a density of 2.8-4.5 deg. Beaumé and a pH of 8-9.5.

2,320,789. Method of and apparatus for molding fibrous pulp articles. Stephen F. Montague and Lee D. Pierce, assignors to Berst-Forster-Dixfield Company, New York, N. Y. Filed Oct. 18, 1939. 4 claims. (Cl. 92-54).

2,320,883. Paper-coating apparatus. Leonard Parkinson, Park Falls, Wis. Filed Nov. 16, 1939. 3 claims. (Cl. 91-45). A method of coating with spray nozzles.

2,320,980. Manufacture of neutral blanc fixe. James B. Pierce, Jr., The First National Bank of Tampa, Fla., executor. Filed Sept. 28, 1940. 9 claims. (Cl. 23-122). An aqueous slurry of barium sulphate is neutralized with an organic acid which is decomposed below 200° C.

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2,321,072. Method of making adhesive-coated surfaces and products so made. Bernhardt J. Eiseman, Jr., Memphis, Tenn. Filed Sept. 27, 1940. 12 claims. (Cl. 117-62). The material is treated with a suspension of unconverted starch in water, heated until the starch is converted, and the outer surface is exposed to humid air and ammonia vapor.

2,321,082. Feeding and distributing mechanism. Norman P. Harshberger, assignor to Carbide and Carbon Chemicals Corporation, New York, N. Y. Filed April 29, 1939. 5 claims. (Cl. 91-43). An improvement in a coating unit comprises a feed roll having a plurality of individual projections and a material distribution member.

2,321,244. Coating of paper. Francis G. Rawling, assignor to West Virginia Pulp and Paper Company, New York, N. Y. Filed March 13, 1940. 2 claims. (Cl. 117-65). To prevent splitting of the applied coating film, the coating composition contains an oleaginous emulsion having an oil and water phase and containing a hydrocarbon oil, a fatty acid, a soap, and starch.

2,321,313. Paper bottle and container. Harold H. Pelzer, Astoria, Long Island, N. Y. Filed April 11, 1940. 15 claims. (Cl. 229-4.5).

2,321,314. Paper bottle and container. Harold H. Pelzer, Astoria, Long Island, N. Y. Filed June 13, 1940. 3 claims. (Cl. 229-4.5).

2,321,331. Container inspecting apparatus. Robert J. Sweezey, Los Angeles, Calif., assignor to Robert S. Burns. Filed July 10, 1940. 10 claims. (Cl. 88-24). A visual inspection means for containers passing under it on a belt conveyor.

2,321,396. Method of and apparatus for manufacturing building covering sheet material. Henry C. Koch, assignor to Abbott Coburn, Chicago, Ill. Filed Aug. 5, 1939. 3 claims. (Cl. 117-65). A method of producing embossed adhesive-coated sheet material.

2,321,397. Waterproofing apparatus. Henry C. Koch, assignor to Abbott Coburn, Chicago, Ill. Filed April 9, 1941. 8 claims. (Cl. 91-46). An apparatus for applying waterproofing material to boards, or the like, of fibrous material.

2,321,407. Cup-making machine. George M. Merta, Los Angeles, Calif. Filed Aug. 30, 1940. 33 claims. (Cl. 93-36.2).

2,321,422. Abrasive product. Norman P. Robie, assignor to The Carborundum Company, Niagara Falls, N. Y. Filed Aug. 17, 1940. 7 claims. (Cl. 51-298). The binder is a water-soluble alkali salt of a plurality of unsaturated monomers, including an acrylic acid.

2,321,562. Carton forming method and apparatus. Don W. Coy and Walter T. Ritter, assignors to United Biscuit Company of America, Chicago, Ill. Filed March 15, 1940. 11 claims. (Cl. 93-51).

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2,321,574. Method of pulp molding. Charles J. Chaplin, assignor to Chaplin Corporation, Portland, Maine. Filed April 19, 1937. 6 claims. (Cl. 92-56).

2,321,647. Apparatus for making containers. Frank O. Brougham and Edmond E. Poulin, assignors to United States Envelope Company, Springfield, Mass. Filed Sept. 21, 1939. 3 claims. (Cl. 93-19). A machine for making open-mouthed bags.

2,321,722. Visual color comparator. Emanuel M. Zelony, New York, N. Y. Filed Oct. 4, 1940. 5 claims. (Cl. 88-14).

2,321,756. Apparatus for drying accreted fibrous articles. Colin Kyle, assignor to Jesse B. Hawley, Geneva, Ill. Filed Sept. 9, 1940. 6 claims. (Cl. 34-145).

2,321,764. Article of manufacture. James A. Mitchell, assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Dec. 6, 1941. 3 claims. (Cl. 260-734). A moisture-proofing composition consists of a 12% solution in toluene of 10 parts wax, 90 parts cyclized rubber and 2 parts of tetraethyldiaminodiphenylmethane.

2,321,830. Papermaking apparatus. William M. Leeson, assignor to The Sandy Hill Iron and Brass Works, Hudson Falls, N. Y. Filed Jan. 23, 1940. 2 claims. (Cl. 92-43). A vat having a curving wall between the lower portions of the side walls and means for swinging a cylinder back and forth relative to the curved wall.

2,321,937. Coated product and method of making same. Robert G. Quinn, assignor to Johns-Manville Corporation, New York, N. Y. Filed Dec. 21, 1939. 1 claim. (Cl. 117-93). A method of coating a fiberboard with an aqueous paint dispersion containing 7% of bonding agents (including urea-formaldehyde and protein) and 1% plasticizer and drying to 60% dryness with infrared radiations, with final drying and hardening by hot ironing.

2,321,938. Coating process. Robert G. Quinn, assignor to Johns-Manville Corporation, New York, N. Y. Filed June 19, 1940. 2 claims. (Cl. 117-65). This is similar to the preceding patent.

2,321,939. Process for coating fibrous sheets. Robert G. Quinn, assignor to Johns-Manville Corporation, New York, N. Y. Filed July 3, 1940. 3 claims. (Cl. 117-66). In a method of applying an aqueous dispersion of a thermosetting resin to the under surface of a board; the board is prevented from sagging during the coating and heat curing by application of suction to the upper surface of the board.

2,322,059. Saturating asphalt. Joseph C. Roediger, assignor to Standard Oil Development Company, Linden, N. J. Filed Nov. 16, 1939. 3 claims. (Cl. 117-168). A mixture of straight reduced asphalt and an oxidized asphalt is used for saturating a building material.

2,322,185. Process for making paper. John A. Bicknell, assignor to S. D. Warren Company, Boston, Mass. Filed Jan. 22, 1940. 26 claims. (Cl. 92-21). Finely divided mineral matter in aqueous medium is flocculated by karaya gum.

2,322,202. Talloel esters of amino alcohols. David W. Jayne, Jr., and Harold M. Day, assignors to American Cyanamid Company, New York, N. Y. Filed Dec. 13, 1941. 12 claims. (Cl. 250-97.5). Tall oil esters of organic sulphonic acid salts of amino alcohols are claimed.

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2,322,242. Coating composition. Francis W. Lanigan and Jacob G. Mark, assignors to Dewey and Almy Chemical Company, North Cambridge, Mass. Filed Feb. 17, 1938. 7 claims. (Cl. 260-757). Depolymerized rubber and wax are mixed in such proportions that the viscosity of molten mixture is essentially that of the wax component.

2,322,345. Fireproof shipping container. James Cage, assignor to Reynolds Metals Company, Richmond, Va. Filed Feb. 3, 1940. 2 claims. (Cl. 206-46). The shipping container is lined with a metal foil of relatively high tensile strength and high heat conductivity and the separators comprise paper faced with metal foil.

2,322,367. Carbon paper. Arthur G. Kjellstrand, assignor to Interchemical Corporation, New York, N. Y. Filed June 3, 1941. 3 claims. (Cl. 282-28). Carbon paper is coated on the reverse side with a waxy composition containing 5-20% of rubbery polybutene and aluminum powder.

2,322,427. Cellulose product. Sidney M. Edelstein, Elizabeth, N. J. Filed Aug. 19, 1941. 7 claims. (Cl. 260-212). A method is claimed for solution of cellulose in sodium zincate and sodium hydroxide.

2,322,493. Article for use in the treatment of leafy vegetables. William H. Wilson, assignor to Fruit & Vegetable Processing Co., Santa Monica, Calif. Filed Sept. 16, 1940. 4 claims. (Cl. 99-193). For packing leafy vegetables, a fibrous sheet containing a sulpho compound is used, the sheet containing not less than 1.5% of sulphur dioxide by weight.

2,322,533. Coating machine. Charles W. Mayer, Rochester, N. Y. Filed Oct. 17, 1941. 8 claims. (Cl. 91-18). A method of using a coating roll.

2,322,629. Nonfoaming asphalt saturant. Henry S. Goodwin, Fanwood, N. J., assignor to Standard Catalytic Company. Filed Feb. 24, 1941. 3 claims. (Cl. 106-273). An asphalt saturant for fibrous material comprises a mixture of 99.8-99.95% of an asphalt and 0.20-0.05% of sulphonated tallow.

2,322,692. Method and apparatus for making absorbent pads. John O. Hunt, assignor to Ware Shoals Manufacturing Co., New York, N. Y. Filed Jan. 6, 1942. 11 claims. (Cl. 154-29).

2,322,731. Former for paper string. George E. Repass, Pawtucket, R. I., assignor to H & B American Machine Company. Filed Aug. 30, 1941. 7 claims. (Cl. 270-94). A device for forming a paper strip into a folded shape preparatory for twisting.

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2,322,886. Adhesive and method of making the same. Seymour G. Saunders and Harry Morrison, assignors to Chrysler Corporation, Highland Park, Mich. Filed Feb. 14, 1940. 11 claims. (Cl. 260-5). The adhesive consists of a fused mass of asphalt, hydrocarbon polymers from the diolefin constituents of a hydrocarbon distillate, and rubber.

2,322,887. Chemical treatment of paper. George L. Schwartz and Joseph F. Walker, assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Oct. 15, 1940. 6 claims. (Cl. 117-155). Paper is treated with an aqueous starch dispersion con-

taining a water-soluble methylol-melamine (1-25 parts per 100 parts of starch), a polyvinyl alcohol (1-25 parts to 75 parts of starch), and an ammonium salt of a mineral acid and heated to insolubilize the reaction product between the starch and the methylol-melamine.

2,322,888. Process for producing high wet strength paper. George L. Schwartz and Joseph F. Walker, assignors to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed Nov. 16, 1940. 8 claims. (Cl. 117-155). The paper web is treated with an aqueous solution of polyvinyl alcohol, an ammonium salt of a mineral acid, and a water-soluble *N*-methylol aliphatic compound (pH 6.1-12.5), and dried from 30-60 seconds at a temperature in excess of 65° C.

2,323,003. Apparatus for cutting paper sheets. Paul Baur, Heidenheim-on-the-Brenz, Germany; vested in the Alien Property Custodian. Filed Feb. 28, 1941. 3 claims. (Cl. 164-65).

2,323,168. Drive for paper manufacturing machines. Alfred V. Bergh, Green Bay, Wis. Filed March 14, 1941. 6 claims. (Cl. 74-26).

2,323,194. Apparatus for the production of pulp from cellulosic material. James B. Beveridge, Westmont, Quebec, Canada, and Richard D. Kehoe, Hadlyme, Conn. Filed Aug. 7, 1940. 7 claims. (Cl. 92-6). This is a modification of the Asplund method, in which a controllable detention period accompanied by stirring or rubbing action is imposed upon the material in the pressure system ahead of the refiner and in addition to the heat and pressure conditions prevailing therein. Chemical reaction or a dissolving action is added to the mechanical and thermal actions during this period. The result is a semi-chemical pulp.

2,323,219. Apparatus for obviating distortion in gummed margins of sheetlike articles. Lynn O. Hayes, assignor to F. L. Smithe Machine Co., Inc., New York, N. Y. Filed July 13, 1939. 15 claims. (Cl. 93-61). Means for obviating curl in the gummed sealing flaps of envelopes.

Reports on Casein Substitutes

The following report on materials which may be substituted for casein in the paper and paper products industry, was prepared for Arthur G. Wakeman, Director of War Production Board Pulp and Paper Division, by a Task Committee composed of the following: Donald V. Lowe, John MacLaurin, James A. Wise, and A. D. Wooley.

The materials which have been used or proposed for use in place of casein in the paper and paper products industry include starch, glue, soya bean protein of various degrees of purity and other miscellaneous materials such as corn protein and other cereal proteins. In so far as we know of the foregoing materials and others proposed as casein substitutes, only starch, glue and soya bean protein products have been used in whole or in part in place of casein for manufacture of certain types of coated papers and paper products.

STARCH: Converted corn starch can be used in the place of casein for the manufacture of coated papers for letterpress or rotogravure printing. It is necessary to use at least 25% more starch than casein in order to satisfactorily bond the coating. Starch has not been successfully adapted to the manufacture of coated papers for lithographic or offset printing, although this may not be accomplished. In so far as is known, the other starches are either unavailable or have not been successfully used as substitutes for casein.

Converted corn starch makes a suitable material for use in place of casein in manufacture of coated paper for letterpress or rotogravure printing. It is recommended that this relationship between casein and corn starch be kept in mind in consideration of the allocation of either.

GLUE—Certain grades of glue can be used in the place of casein, either alone or in admixture with casein, in manufacture of coated papers, although in general, its usage would be somewhat higher. There are serious operating problems associated with the use of glue such as foam and pinholes, fisheyes, spoilage and odor, and greater difficulty in waterproofing. However, it is understood that no appreciable quantity of suitable glues is available.

SOYA BEAN PROTEINS, *Alpha Protein* (88% soya protein). This product is being used in manufacture of coated paper, but usually in admixture with casein. In admixtures with casein, it can be substituted pound for pound up to at least 50% alpha protein and can undoubtedly be extended to higher percentages. Alpha protein is more difficult to waterproof than is casein, although this is not serious when used in admixture with appreciable amounts (of the order 50% of casein. Alpha protein is a suitable substitute for casein in manufacture of coated papers for letterpress and rotogravure and for lithograph and offset when used in admixture with casein.

An expansion in the production capacity for alpha protein would very materially aid in easing the casein shortage situation in the coated paper industry.

Soya Flour (known as Prosein, Gamma Protein, Special Soya Bean Protein, etc. Approximately 50% soya protein.) In so far as we know, soya flour is used only in admixture with large amounts of casein in manufacture of coated papers. The percentage of soya flour which may be used depends upon the bond or "pick value" necessary in the finished sheet. The total adhesive usage (casein and soya flour) in some cases (highly bonded grades) is higher than with 100% casein. In general, soya flour is substituted to the extent of 20 to 30% of the total adhesive. Papers so made are suitable for letterpress, rotogravure, lithographic and offset printing.

CORN PROTEINS—In so far as we know, none of the corn proteins have been successfully applied to the manufacture of coated printing papers. On the basis of our information, the major deficiencies seem to be a lack of adhesive power and difficulty in waterproofing.

SUMMARY — In our opinion, alpha protein from soya beans is the best all-round substitute for casein. The casein situation will be greatly alleviated if alpha protein is made available.

Converted corn starch can be substituted for a large portion of the casein normally used in the coated paper industry. We believe that appreciable quantities of corn starch could be released through the use of wheat and rye starches for beater sizing and tub sizing thus making corn starch available for coating.

Soya flour and high grade glues, if available, will relieve the casein situation to an appreciable but limited degree.

Clarifies Pulpwood Prices

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 28, 1943—Pulpwood ceiling prices in Maine, Vermont, New Hampshire and New York are governed with reference to the point where the wood is cut from the stump, and not the point where the seller delivers the wood, the Office of Price Administration emphasized today.

Under Maximum Price Regulation 361 (Pulpwood Produced In or Sold Into the States of Maine, Vermont, New Hampshire and New York) different ceilings prevail for four different zones within those four states.

Reports have reached OPA that some sellers are taking ceilings for the zone where the pulpwood is delivered rather than for the zone where the wood is cut in instances where this will result in higher prices than allowed.

OPA reiterated today what is clearly set forth in the regulation that the zone ceilings must be applied to all pulpwood cut from the stump within the respective zones. Pulpwood cut in Zone 1 and delivered in Zone 4 cannot take the ceilings provided for Zone 4, but must take the Zone 1 ceilings, for instance.

Effect of Sulphate Mill Wastes on Fish Life*

By J. A. Extrom[1] and D. S. Farner[2]

Abstract

Fish of varying species were subjected to the action of various sulphate mill effluents.. A laboratory was constructed, and was equipped to provide conditions simulating those of actual mill operation.. Fish thrived on river dilutions of the wastes studied. High concentrations of the wastes were definitely toxic to the types of fish used in the experiment.

The experiments which are described in this report were sponsored by the Sulphate Waste Disposal Executive Committee in cooperation with the Bureau of Sanitary Engineering of the Wisconsin State Board of Health and the Wisconsin Conservation Department. The experiments were planned by the Sulphate Waste Disposal Technical Committee with the help of representatives of the Conservation Department and the Bureau of Sanitary Engineering. The laboratory was constructed and equipped under the direction of J. A. Extrom, Chairman of the Sulphate Waste Disposal Technical Committee. It was located on the property of the Tomahawk Kraft Paper Company, Tomahawk, Wisconsin. The actual experimental work was conducted by the biologist for the Sulphate Waste Disposal Committee and his staff under the general supervision of the Technical Committee.

The object of these experiments was to study the effect of certain sulphate mill wastes which are ordinarily discharged into streams through the mill sewers. It was planned also to design the equipment and experiments in such manner as to simulate stream conditions in relation to mill operation in so far as possible. This involved the use of a system of constantly changing water in the fish tanks and a system for supplying constant and controlled pollution. The wastes used in these experiments were "black liquor," "digester condensate" and "total mill sewage" (pulp and paper mill). Total mill sewage did not include hot pond effluent and causticizing effluent. Analyses of average samples of these wastes have been made (*see* Table I).

General Procedure

In the planning of the experiments it was decided to subject the fish to two concentrations of each of the wastes. These concentrations were "stream concentrations" as determined by the maximum amount discharged in relation to the minimum stream flow and "sewer concentration" the amount discharged in relation to the total volume of sewage discharged. The following concentrations were established by the Technical Committee.

Digester condensate, "river concentration"	0.4 gal./1000 gal.
Digester condensate, "sewer concentration"	20 gal./1000 gal.
Black liquor, "river concentration"	0.02 lb./1000 gal.
Black liquor, "sewer concentration"	1.0 lb./1000 gal.
Mill sewage, "river concentration"	0.06 lb./1000 gal.
Mill sewage, "sewer concentration"	60 lb./1000 gal.

Mill sewage and black liquor concentrations were computed on the basis of total solids. It was ultimately necessary, however, for want of an adequate method of analysis, to calculate mill sewage pollution on the basis of equivalent volumes.

The laboratory which was constructed was a frame building, 34 feet by 16 feet in dimensions. It was equipped with ten fish tanks. These tanks were constructed of sheet iron and were circular, 12 inches deep and 60 inches in diameter. These tanks were painted all over with asphalt paint which is inert to aquatic organisms. The bottoms of the tanks were painted with aluminum paint to facilitate observations. The inflow pipes were located near the sides of the tanks and below the surface of the water. This imparted a circular motion to the water and made the tanks practically self cleaning. The necessary cleaning consisted only in brushing the bottoms of the tank, the foreign material being carried out by the circular motion of the water.

The outflow orifices were 3/8 inches in diameter. When the level of the water in the tanks was maintained at 10 inches above the bottom of the tanks by means of the inflow taps the delivery through the outflow orifices was 4 gallons per minutes for each tank. A constant pressure was maintained on the inflow taps by pumping the water into a reservoir consisting of two 2900 gallon units placed on platforms near the laboratory. The reservoir was equipped with an overflow; the water was maintained at overflow level at all times. The capacity of each fish tank filled to a 10 inch level was 120 gallons with an exchange of water at the rate of 4 gallons per minute.

River water was obtained from the cistern of the Tomahawk Kraft Paper Company and was pumped continuously into the laboratory reservoir described above. It was found in obtaining water in this manner that there was a depletion of 0.5-1.0 p.p.m. of dissolved oxygen. Therefore it was frequently necessary to add oxygen to the water. This was accomplished by using compressed oxygen and a 4-inch hardwood diffuser which was suspended in the reservoir. This provided a quick and simple method of raising the dissolved oxygen content of the water when the necessity arose. In general the dissolved oxygen content was not allowed to fall below 4.0 p.p.m although on a few occasions it did drop lower than this.

Dissolved oxygen was determined by the Winkler method. Azide was added to the alkaline iodide

TABLE I.—ANALYSIS OF WASTES USED

Type of Waste	Digester Condensate	Black Liquor
Total Solids, %	0.035	16.0
Total Alkali as Na_2O, g./l.	0.14	32.4
Sulphide as Na_2S, g./l.	0.16	6.6
Ether Extraction (Soap Acids)		
Soluble in ether, %	0.010*	....
Unsaponifiable, %	....	0.11
Saponified Acids, %	....	0.75
Resin Acids, %	....	0.40
Fatty Esters, %	....	0.16**
Total Sulphur, %	0.007	0.52

* Because of the small quantity, no further separations were made.
** Single esterification of fatty acids; some polymerization occurred during separation.
Methods: Total solids, total alkali, sulphide—Institute 109.
Ether Extraction—Institute 114. Basis of report: as received.
Total Sulphur—Institute 111. Basis of report: as received.
Esterification Method—Wolff and Scholze.
Note: The above analysis was on a seven-day composite.

* Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 15-18, 1943.

[1] Member TAPPI; Chairman, Technical Group Kraft Waste Disposal Committee and Technical Director, Tomahawk Kraft Paper Co.
[2] Biologist, University of Wisconsin.

reagent to avoid errors due to the presence of nitrites. In cases of high pollution the Theriault alkaline-hypochlorite modification was employed. Routine carbonate, bicarbonate, carbon dioxide, and pH analyses were made. In the results bicarbonate and carbonate are expressed as parts per million of carbon dioxide.

Each fish tank was equipped with a 50-gallon pollution tank from which the wastes were added (see illustration). The pollution tanks were equipped with floats to which siphons with calibrated nozzles were attached. This device produced a system with a constant head and therefore constant pressure and constant rate of delivery. After the rate of flow had been regulated pollution was then only a matter of diluting the waste to the proper concentration in the pollution tank. The siphons were cleaned daily. The rate of flow was determined each day. Rather than changing the rate of flow the concentrations of the wastes in the pollution tanks were adjusted to compensate for a change in output.

Mill wastes were used as they were produced day by day. From the standpoints of time and personnel it was not possible to make daily analyses of the wastes except for solid content of the black liquor and the total mill sewage. This is unfortunate in that there are obviously huge variations in the wastes from time to time. However, the pollution was checked to a considerable degree by five days B.O.D. and oxygen consumed from permanganate determinations. In the latter the strong reagents (1 ml. permanganate solution is equal to 1.0 mg. oxygen consumed) were used. In general the results obtained with the two methods were parallel.

The original plans for this investigation involved the use of 1000 largemouth bass (Huro salmoides), 6-8 inches in length as experimental animals. These bass were to be collected and placed in the laboratory tanks during the first week in April. However, difficulties were encountered in collecting bass at this time. Ultimately it was necessary to have the fish collected under the direct supervision of the biologist and the chairman of the Technical Committee using equipment and an experienced net operator supplied by the Conservation Department. Because it was now well into June it was decided to use bluegills *(Lepomis macrochirus)* and sunfish *(Lepomis gibbosus)* in addition to the bass because of their availability in large numbers in the Wisconsin River flowage. On July 1, 289 bluegills, 62 sunfish, and 214 largemouth bass were in the laboratory tanks and properly conditioned for experimental use.

The bass were fed on live minnows which were obtained in cooperation with the Conservation Department. In order to keep large numbers of minnows on hand a minnow pond, 20 feet by 35 feet by 4 feet, was consructed and sealed with "Aquaseal." It was fertilized with 20 pounds of 20% phosphate and 60 pounds of soy bean meal. A good bloom and an abundant crop of zooplankton were produced. Water was sprayed into the pond whenever the water level dropped and whenever the dissolved oxygen dropped below 4.0 p.p.m. About 20,000 minnows were used in the course of the summer.

Sunfish and bluegills were fed on canned carp, brewers' yeast and fresh liver. Eighty-four pounds of canned carp, 4½ pounds of brewers' yeast, and 3 pounds of fresh liver were fed each week.

On this diet the sunfish and bluegills were maintained in excellent condition. Canned carp and brewers' yeast were obtained through the cooperation of the Conservation Department.

Experimental and control tanks were each stocked with about 20 bass (4-6 inches), 30 blue gills (4-7 inches), and 7 sunfish (4-7 inches). Whenever fish were exposed to pollution it was done gradually over a period of a few days. Routine observations included those on respiratory rate and rhythm, feeding, and general activity. All fish killed by exposure to wastes were autopsied.

1. Effect of River Concentration of Black Liquor

After three days of preliminary exposure to increasing concentrations of black liquor the fish in this tank were exposed to river concentration of black liquor from July 9 to August 28. The conditions to which these fish were subjected are shown in Fig. 1. One bluegill death occurred in this tank although it was due to mechanical injury. No other deviations from normal behavior and activity were observed.

2. Effect of River Concentration of Digester Condensate

After three days of preliminary exposure to increasing concentrations of digester condensate these fish were exposed to river concentration of digester

Waste Disposal Laboratory Building, Minnow Breeding Pond, and Inlet Water Storage Tanks.

Inside View of Waste Disposal Laboratory Building Showing Rearing Tanks and Sewage Reservoirs.

condensate from July 10 to August 28. The conditions to which these fish were subjected are shown in Fig. 2. No deaths occurred. No deviations from normal behavior and activity were observed.

3. Effect of River Concentrate of Mill Sewage

After three days of preliminary exposure to increasing concentrations of mill sewage the fish in this tank were exposed to river concentration of mill sewage from July 11 to August 28. The conditions to which these fish were exposed are shown in Fig. 3. No deaths occurred. No deviations from normal behaviour and activity were observed.

Control Tank

This tank contained the same numbers of fish as the experimental tanks and excepting pollution was subjected to similar conditions as shown in Fig. 4. Between July 9 and August 28 two bass died, one when the oxygen dropped below the critical level and the other with an abonormally heavy infestation of intermuscular parasites.

4. Effect of 50% Sewer Concentration of Black Liquor

Over a period of seven days the concentration of black liquor was gradually raised to 50% sewer concentration. From July 23 to August 18 the fish were exposed to this concentration. For the conditions to which these fish were subjected and the mortality rates see Fig. 5. At the end of 24 hours' exposure the first bass died; at the end of four days 50% were dead; all were dead in nine days. The first sunfish died at the end of eight days; half were dead in ten days; all were dead in 15 days. The first blue gill died after 13 days; 14 were still alive at the end of the experiment. Fourteen days after the concentration of black liquor reached 50% sewer concentration some of the bluegills started to feed again. Some eventually returned to normal feeding during the course of the experiment. In general the bass when first affected struggled to force themselves from the water and swam about without coordination gradually losing equilibrium. At this time the respiratory rate was still normal (60-90 per minute). After a period lasting from a few minutes to an hour they would sink to the bottom. At this point a slight decrease in respiratory rate could be detected. Also double movements could be detected at intervals of 6-20 normal movements. Occasionally a bass in this condition would recover sufficiently to swim about incoherently for a few minutes only to settle to the bottom again. In a few cases the respiratory rate increased when the fish went down. In such cases the respiratory move-

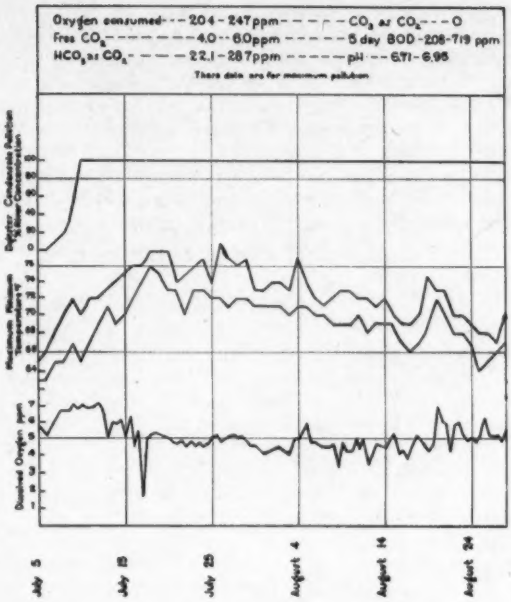

Fig. 2
River Concentration Digester Condensate

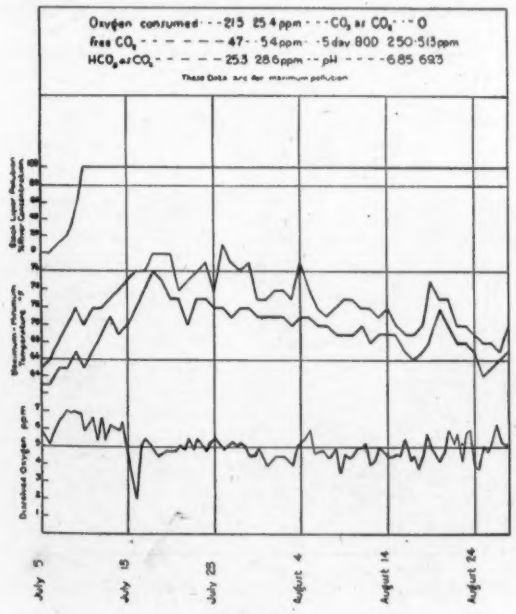

Fig. 1
River Concentration—Black Liquor

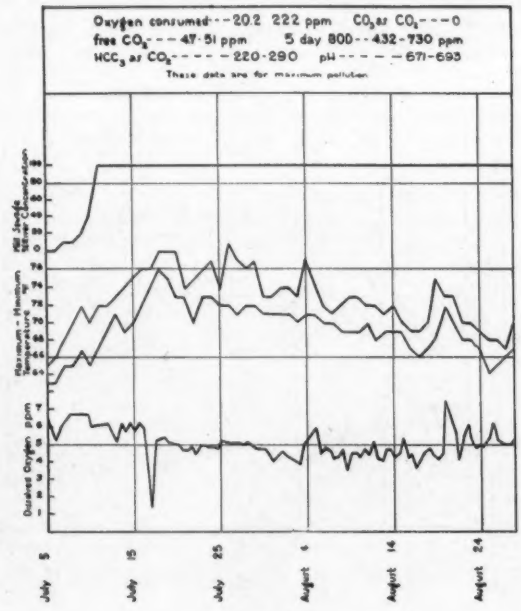

Fig. 3
River Concentration—Total Mill Sewage.

ments were very shallow. Autopsies revealed no gross abnormalities except that the gall bladders were invariably distended with acid watery bile. The behavior of the sunfish and the bluegills which were affected was in general similar to that of the bass although in these species no "double movements" were detected in the respiratory rhythm. Autopsies in these two species also revealed gall bladders distended with acid watery bile in those fish which had been killed by exposure to black liquor.

5. The Effect of Sewer Concentration of Black Liquor

In five days the concentration of black liquor was raised gradually to sewer concentration which was reached on August 19. One hour after this concentration was reached the first bass died; half were dead in 16 hours; all were dead in 27 hours. The first sunfish died after 10 hours; half were dead after 60 hours; all were dead in 160 hours. The first blue gill died after 60 hours; half were dead when the pollution was discontinued after seven days. The behaviour of the fish in this experiment was identical with those in Experiment 4. Autopsies showed gall bladders distended with acid watery bile. Frequently the fish turned very light in color shortly before death. The conditions to which the fish were subjected and the mortality rates are shown in Fig. 6. It is interesting to note that although twice as much black liquor was used in pollution as in the Experiment 4 the oxygen consumed from permanganate was not proportionately greater whereas the expected proportionality existed in the 5 day B.O.D. analyses. This doubtlessly indicates some difference in the composition of the liquors used. This could very conceivably be due to a difference in the cooking process at the two times (see Table II).

TABLE II

	Total Solids	Oxygen Consumed	5 Day B.O.D.
Exp. 4	0.5 lb./1000 gal.	70.0- 79.2 p.p.m.	10.9-15.3 p.p.m.
Exp. 5	1.0 lb./1000 gal.	95.8-107.8 p.p.m.	25.3-30.1 p.p.m.

This type of variability is and always will be one of the severest difficulties in the study of the effects of sulphate mill pollution. During the course of this experiment some of the fish were removed in order to study their recovery in unpolluted water. Three

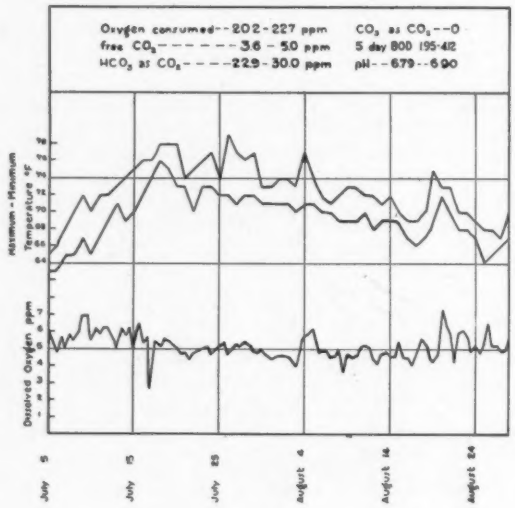

FIG. 4
Control Tank

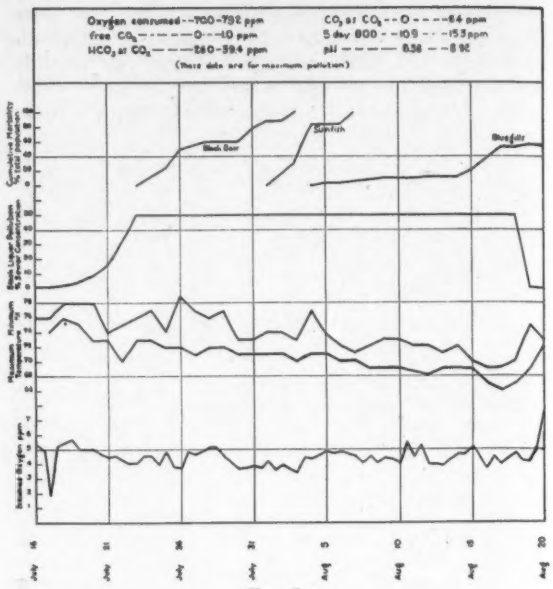
Oxygen consumed--700-792 ppm
free CO_2 - - - - - 0 - -10 ppm
HCO_3 as CO_2 - - - -280-394 ppm
CO_2 as CO_2 --0 - - - -64 ppm
5 day BOD - -109 - - -153 ppm
pH - - - - - 6.58 - -6.92
(These data are for maximum pollution)
Black Bass
Sunfish
Bluegills
Cumulative Mortality % total population
Mean Lower Solution % Sewer concentration
Maximum - Minimum Temperature °F
Dissolved Oxygen ppm
Aug 13
Aug 18
Aug 23
Aug 28

FIG. 5
Effect of Black Liquor—⅓ Sewer Concentration

bass were removed while they were still able to swim about upright after six hours' exposure to the sewer concentration of black liquor. These recovered. Three blue gills removed at the same time also recovered. Four blue gills and one bass were removed after 30 hours; all recovered although the recovery of the bass was slow. Fish removed to fresh water after they had fallen to the bottom of the experimental tank did not recover.

6. The Effect of Sewer Concentration of Digester Condensate

Seven days of increasing concentration of digester condensate preceded pollution at sewer concentration of digester condensate. The first bass died after 9 hours' exposure to sewer concentration of digester

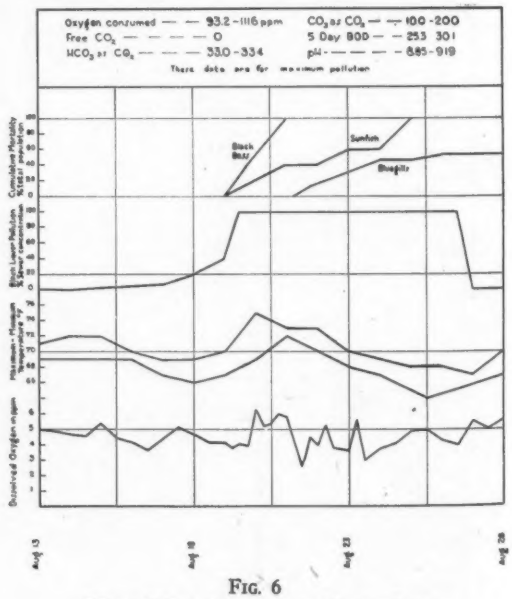
Oxygen consumed — — 93.2 -116 ppm
Free CO_2 — — — — 0
HCO_3 as CO_2 — — — 33.0 - 33.4
CO_2 as CO_2 — — 100 -200
5 Day BOD — — 253 301
pH - — — — - 885 - 919
There data are for maximum pollution
Black Bass
Sunfish
Bluegills
Cumulative Mortality % total population
Mean Lower Solution % Sewer concentration
Maximum - Minimum Temperature °F
Dissolved Oxygen ppm
Aug 13
Aug 18
Aug 23
Aug 28

FIG. 6
Effect of Black Liquor—Sewer Concentration

condensate; half were dead after 22 hours; all were dead in 34 hours. At the end of 34 hours no bluegills or sunfish had died although they were obviously affected. Shortly thereafter the bluegills and sunfish began to swim about violently and without coordination. They became very light in color. Within an hour all were lying on the bottom and died within another hour. The digester condensate which was added just before this (the 3rd lot since the beginning of the maximum pollution) was very dark in color and was without a doubt very much more toxic than the lots which were used previously. Unfortunately data on oxygen consumed, 5-day B.O.D., and routine water analyses were not obtained. The dissolved oxygen dropped from 4.30 to 2.81 p.p.m. There was no corresponding drop in dissolved oxygen in the other tanks indicating that the particular lot of digester condensate used at this time had a higher oxygen demand. The behaviour of the fish in so far as respiratory rate and rhythm are concerned was similar to those subjected to high concentrations of black liquor. The respiratory rate became significantly slower as death approached. Bass and blue gills which had been affected by the digester condensate to the extent of loss of equilibrium and which were removed to unpolluted water showed only 60% recovery. Those which were removed when they were lying on their sides on the bottom never recovered.

7. Effect of 70% Sewer Concentration of Mill Sewage

The pumping system employed could not deliver more than 2.9 gallons per minute so that amount was used rather than 100% mill sewage which had been originally planned. As in the previous experiments the bass were affected first. The toxicity seemed to increase with the oxygen consumed and 5-day B.O.D. This is shown in Fig. 8. The general behaviour of the fish was the same as that of the fish exposed to high concentrations of black liquor and digester condensates. Autopsies revealed gall bladders distended with acid watery bile as the only gross abnormalities. Many of the bluegills showed a peculiar mottled color pattern with contrasting light and dark areas. The conditions to which the fish were subjected and the rates of mortality are shown in Fig. 8.

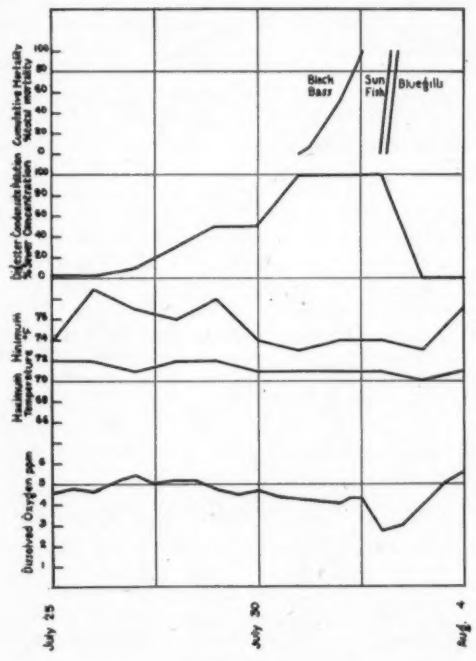

Fig. 7
The Effect of Digester Condensate Sewer Concentration

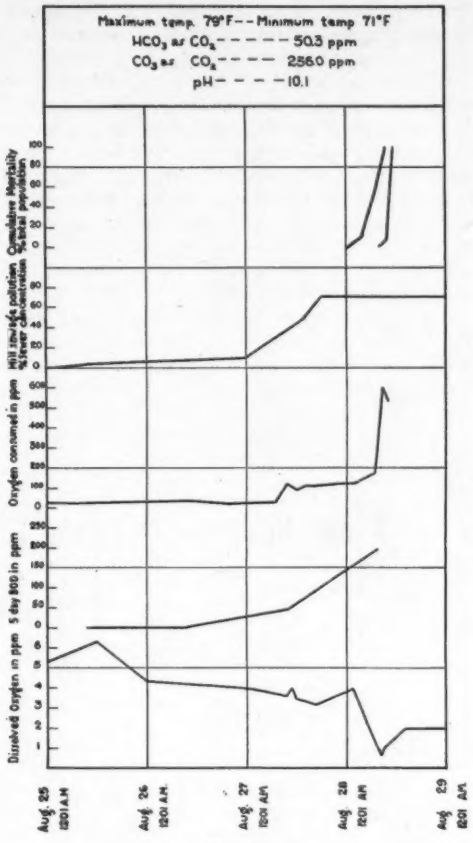
Maximum temp. 79°F--Minimum temp 71°F
HCO_3 as CO_2 - - - - - 503 ppm
CO_3 as CO_2 - - - - 2560 ppm
pH - - - - 10.1
Aug. 25 12:01 A.M.
Aug. 26 12:01 A.M.
Aug. 27 12:01 A.M.
Aug. 28 12:01 A.M.
Aug. 29 12:01 A.M.

Fig. 8
Effect of Total Mill Sewage—70% Sewer Concentration

General Pollution of All Tanks

At 3:00 A. M. August 29 the bass in all of the tanks in the laboratory began to show signs of distress similar to those caused by pollution with mill sewage, digester condensate or black liquor in high concentration. The dissolved oxygen was above the critical point. Within 6 hours all the bass were dead. Five per cent of the bluegills and sunfish died. Autopsies showed gall bladders distended with acid watery bile. Water samples were collected at intervals beginning with the first observation of distress among the bass (see Table III).

TABLE III

Time	Tank B.O.D. p.p.m.	Tank Oxy. Con. p.p.m.	Tank D.O. p.p.m.	River B.O.D. p.p.m.	River Oxy. Con. p.p.m.
3:30 A.M. August 29	31.9	50.8	5.1	5.0	25.2
6:00 A.M. August 29	14.1	35.0	4.9	5.5	29.8
11:00 A.M. August 29	3.3	27.4	..	1.7	30.0
3:30 P.M. August 29	1.9	23.6	6.2	2.2	23.6
1:00 P.M. August 30	1.4	22.6	4.3	1.6	23.4
2:45 P.M. August 31	1.3	22.4	4.6	1.7	22.6
1:00 P.M. September 1	1.7	...	5.4	1.0	...

It is very probable that the B.O.D. and the oxygen consumed were at considerably higher levels before 3:30 A.M. The differences between the river data and the tank data are doubtlessly due to the time in-

volved in getting water from the river through the mill cistern and laboratory reservoir into the fish tanks. Bottles were thrown into the mill sewer during this time in order to study the currents in the flowage. A strong southeast wind was blowing. Observations made on the courses of the bottles showed that an eddy had been formed which was carrying water from the sewer outlet to the mill intake. This doubtlessly accounts for the loss of the fish in the laboratory tanks. It is obvious that these deaths were due to the toxicity and not to oxygen depletion.

Conclusions

1. Bass, bluegills, and sunfish were kept in river concentrations of black liquor, digester condensate, and mill sewage. The fish thrived, fed well, showed normal behavior, and grew.

2. The sewer concentrations of these effluents were toxic. In general the fish first lost their equilibrium and swam about without coordination. They then settled to the bottom and laid on their sides after which the respiratory rate usually decreased gradually until death. Autopsies invariably revealed gall bladders distended with acid watery bile.

3. Bluegills proved to be much more refractory to high concentrations than bass. Sunfish were intermediate.

4. It was not possible to detect an appreciable oxygen depletion in the tanks with the river concentrations of effluents. Five-day B.O.D. and oxygen consumed data were not significantly higher than the control tanks. At sewer concentrations a varying amount of oxygen depletion occured.

5. It is possible for mill effluents to cause temporary toxic conditions in natural waters as was shown by the loss of the bass in the laboratory tanks on August 29.

Factors Affecting Smoothness of Paperboard*

By K. C. Melenbacker[1]

Abstract

There are two general groups of factors affecting smoothness, internal factors and external factors. Internal factors are those concerned with materials in the paper, the fiber, chemicals, and fiber treatment as it affects fiber structure. The external factors are those concerned with the conversion of the original furnish after treatment into a sheet of paperboard. These are the factors of formation, cylinder faces, felts, presses, driers, and calenders. One or more factors should not be emphasized over others but are interdependent in the manufacturing process. For example, coarse fiber can never result in a smooth finish sheet no matter how fine the equipment; on the other hand, the finest furnish can be no smoother than the papermaking equipment is capable of producing. Machine factors resolve into two subtypes: one of felt conditions creating roughness and the other of presses, driers, and calenders eliminating roughness.

The production of a smooth sheet requires the proper raw materials divided between a top-liner and an underliner. Stock treatment must be carried on under uniformly controlled conditions. The paper machine must be kept in the best possible mechanical condition, properly felted, with rolls properly crowned. Cylinders must be covered with wire mesh fine enough to fit in with the overall smoothness desired.

Smoothness varies inversely with caliper provided density remains approximately the same. Smoothness will increase in some sort of ratio proportional to the number of nips a sheet passes through provided weighting remains constant. Although the effects of poor formation and improper water removal can be overcome at the calenders, it is felt that a better solution to smoothness problems lies in the analysis and corrective measures applied to furnish formulas, stock treatment, and wet end operation.

Smoothness to a papermaker might be defined as a uniformly flat surface, free of fuzz or lint, showing little, if any, evidence of passage through its many manufacturing processes. It might be defined in terms of a numerical symbol which can be obtained by testing a surface with a device developed for that purpose.

Smoothness to a box manufacturer might mean the ability of a surface to take printing of a more or less complicated nature.

Smoothness to the user of a finished article made from paperboard would probably be closely related to its eye appeal; to the manner in which it has reacted to his specifications, as carried out by the box manufacturer.

There are two general groups of factors affecting smoothness, internal factors and external factors. Internal factors are those concerned with materials in the paper: the fiber, chemicals, and fiber treatment as it affects fiber structure. External factors are those concerned with the conversion of the original furnish after treatment into a sheet of paperboard. These are the factors of formation, cylinder faces, felts, various kinds of presses, driers, and calenders. It shall be the purpose of this paper to fit these factors into an overall, interrelated picture which has as its focus, the production of a smooth sheet of paperboard.

Selection of Materials of Furnish

In the discussion which follows it should be established:

1. Reference to a board machine indicates a 6-cylinder machine of conventional design. The discussion can be applied, however, to machines having fewer or more than six cylinders.

2. Reference to paperboard will be taken to mean

*Presented at the Annual Meeting of the Technical Association of the Pulp & Paper Industry, Hotel Commodore, New York, N. Y., Feb. 15-18, 1943.

[1]Container Corporation of America, Manyunk, Philadelphia, Pa.

the better white-lined grades—e. g., white patent coated. In addition, since the discussion concerns the surface of paperboard, emphasis will be on top-liner and underliner even though these may not be specified.

3. The discussion does not represent the ideas of the writer alone, but is more a compilation of the opinions of a number of men in the organization of which he is a part.

4. It should be recognized that no attempt can be made in a single paper to adequately do justice to the topic under discussion.

A sheet of paperboard starts along its path of manufacture when its components are set forth in a formula or "furnish." In arriving at a proper furnish, the papermaker must have in his mind a picture of the entire manufacturing process. He must be familiar with the properties of the varous pulps, pulp substitutes, waste papers, chemicals, and other materials which are available. He must have a fund of knowledge accumulated from past experience, from technical work and analysis, so that he can predict, to a certain extent, results under given conditions. By giving each factor its exact place in the overall picture, he will be able to formulate a furnish with reasonable assurance that the finished sheet will meet specifications.

In considering smoothness as one of the specifications, he will not use coarse fiber, but will use the finest fibers possible. He will not use a mixture of fibers that do not blend well together and that will not be susceptible to the kind of stock treating equipment available to him. He must either regulate his furnish or some other part of the operation so there is no trace of fuzz on the surface of the finished sheet. Finally, he must not err on his furnish to such an extent that wet end operation or drying are affected beyond reasonable limits, or that other important properties are unduly sacrificed.

The effect of controlled stock preparation on smoothness is recognized by all papermakers. Stock preparation is no longer merely a matter of defibering, hydrating, and jordaning. It is a closely controlled step in the manufacturing process. Properly done, it will pay dividends, not only in increased smoothness, but in a general improvement in other characteristics.

Boxmakers are continually asking for better and smoother printing surfaces in order to meet the demand for containers with more eye appeal. Four-color print jobs with varnish are becoming commonplace, and there is every reason to believe that 5 and 6-color printing will come into use. Such printing requires a sheet with a uniformly high degree of smoothness which in turn demands a close control over stock preparation.

Technical Controls

Liner furnishes should be treated at a given consistency and temperature throughout any individual run and for repeat orders of the same grade. The beating cycle should always be the same, as should any subsequent treatment for further refining or hydrating. Consistency and freeness tests should be made at any step in the process where control is important. These two tests are mentioned because they are the ones in common use. Others can be used depending on particular requirements. At times it may become necessary to vary freeness specifications from established standards because of machine conditions, changes in raw stock quality, or for some other reason. It seldom should be necessary to change consistency specifications.

Sufficient agitation should be provided in all chests so that no consistency variation occurs due to settling or channeling.

Underliners were probably first used in mills where it was necessary to run at least two cylinders of top-liner for proper coverage. In such mills it became economically advantageous to substitute a cylinder of liner made of cheap waste papers for a cylinder of expensive top liner. It is doubtful if first considerations went beyond this one idea.

Later on, if the proper attention was given the underliner, it probably became apparent that there was at least one other factor which justified its use—namely, a definite increase in smoothness. This increase in smoothness is due to the fact that a properly blended and prepared underliner achieves superior formation, fills up voids and provides a smooth, closely knit base for the layer or top-liner. In formulating his underliner furnish, the experienced papermaker will bear in mind the requirements of flexibility or "bender", opacity, whiteness, and color uniformity in his selection of waste papers.

For those who have some doubt as to the values of an underliner, we might point out the savings in pulps and the better grades of waste papers which result, a saving that is extremely important during the present emergency.

So far we have attempted to point out the effect furnish and stock treatment have on smoothness. We have recommended the use of an underliner to help out in this respect. Now let us assume that we have stock in the machine chests which has been formulated and prepared under correctly controlled conditions.

In its path from machine chest to forming vat the stock is diluted with water, screened, diluted again and piped to vats where it forms the top components of our sheet of paperboard. It is believed that the mixture of stock and water should be sufficiently mixed and agitated from screen to vat that all fibers are completely separated and not allowed to agglomerate until formation begins on the cylinder wire.

The formation of a layer of stock on a cylinder wire is a purely physical phenomenon, and there are any number of vats designed and built for this purpose. Before the advent of scientifically designed cylinder showers, the fineness of mesh used to cover cylinders was determined at least in part by the extent and rapidity with which they filled up. It is now possible to use faces of a much finer mesh and have less trouble with the wire clogging and filling than was possible some years ago. In general it can be stated that the finer the mesh used, the smoother the finished sheet will be. This assumes that all other factors are equal. If the proper correlation between furnish, stock treatment, and vat eccentricity are worked out, there should be little difficuly in forming a sheet which will have a maximum smoothness as determined by internal factors. The less the surface is deformed by subsequent external factors in the operation, the more effect these internal factors will have on the smoothness of the finished sheet.

Paperboard in the forming process is so soft and plastic that it conforms exactly to the structure of the felts at its top and bottom surfaces. This is he source of the felt mark and is a fixed condition which

can only be slightly modified. The effect of the felt mark can be lessened somewhat by the use of finer felts, by installing suction equipment, or by extracting less water at primary presses. The use of finer felts is likely to result in higher felt costs; suction equipment is expensive to install and may not show a high return; extracting less water at the wet end means more steam consumption in drying. If drying capacity is limited, production will suffer. It may well be that for some mills the step-up in quality will offset cost increases. Thus it appears that any solution to the problem necessarily will be influenced by economic considerations and must be decided by the individual mill.

Economic Considerations of Smoothness

The effect of felt marks may be greatly increased by certain practices which are basically unsound. There may be too much emphasis on low felt costs which prompts the use of coarse felts in attempts to obtain long felt life. Excessive weighting may be employed at primary presses in efforts to remove a maximum amount of water. Such practices may be false economy. It should be remembered that top quality commands top prices.

Correct crowning of all rolls is another external factor affecting smoothness, and when integrated with proper cover density will go a long way toward solving smoothness problems. In this connection a definite roll-grinding procedure should be established with an adequate system of records. Such records are valuable because they serve as guides in determining when rolls should be ground, recovered, replaced, or modified in line with existing conditions of operation.

The functions of main presses are to remove water and partially eliminate roughness created by primaries. Little more can be said beyond the fact that felts and rolls for these presses should be designed to obtain maximum efficiency. We can pass over drying as having relatively little effect one way or another on the smoothness of the finished sheet. There may be instances where drying is scientifically controlled, but in the majority of cases it is not done.

It might be well to digress from the general nature of our subject to consider for a few moments the specific point—effect of caliper on smoothness. In the lack of any factual data to support the following statements, they should be regarded as opinions only and as such, subject to critical interpretation.

Broadly speaking, smoothness will increase as caliper decreases, and conversely, will go down as caliper goes up. Necessary changes in stock treatment as dictated by machine requirements in the forming process usually will enhance such smoothness trends.

The reasons are fairly obvious. Cylinder loadings in the higher calipers require better drainage characteristics in stock. Usually this means a reduction in treatment given the fiber, which adversely affects smoothness. In addition, formation on the cylinder wire will be poor, causing smoothness to be reduced still further.

Smoothness trends with changes in caliper will be affected by machine speeds and sheet density. The slower a machine runs, the smoother the finished sheet will be, provided stock preparation is geared to operating conditions. Water drains from a sheet easier at slow speeds than at high speeds. Consequently, stock treatment can be increased, formation will be better and smoothness will be higher. Any increase in sheet density will be accompanied by a corresponding increase in smoothness, all other things remaining constant. These facts are generally recognized and should require no further elaboration.

Vat design has a great influence on the extent to which smoothness changes with caliper. The ideal vat is one which best utilizes and preserves the internal factors affecting smoothness, regardless of weight or caliper.

The structure of a sheet of paperboard embodies in it a certain degree of resiliency, one manifestation of which is its effect on smoothness. High-caliper board is more resilient than low-caliper board and because of this, receives less smoothing in the calender nips. The effect might be likened to an attempt to produce two surfaces of equal smoothness by means of a heavy roller, in one instance where clay is spread over rock; in the other where it is spread over a foot-thick layer of sponge rubber. The example is greatly exaggerated but will serve as an illustration.

We can close this short discussion regarding effect of caliper on smoothness by noting that all machines will not react to the conditions outlined the same way or to the same extent. There may be other factors which have more effect than the ones mentioned, but in the main, it is felt these are the principle ones.

Theoretically, at least, smoothness will go up in some ratio proportional to the number of calender nips a sheet passes through. Actually the practices followed in this respect are dictated by the available equipment. If a papermaker is having trouble meeting smoothness specifications, should he ask for another stack of calenders or should he ask to have his wet end rebuilt so that he can retain the internal factors affecting smoothness? Should he replace the large rolls in his stacks with a greater number of smaller ones, thus increasing the number of nips through which he can pass his paperboard? Or should he find the solution to his problem in analysis and corrective measures applied to furnish formulas, stock treatment and wet end operation? In most cases, it is felt that this latter course is the proper approach.

If we focus our attention on calender-stack operation alone, there are a few points which might well be brought out. The sheet off the driers should go into the calenders with some moisture in it. Position and number of water boxes can greatly influence smoothess. Steam-heated rolls can sometimes make the difference between an average sheet and an extremely good one, so far as smoothness is concerned. Last, but not least, stacks must be kept in the best possible mechanical condition.

Conclusion

Smoothness in paperboard is affected by internal factors and external factors. One factor should not be emphasized over another, and we have tried to show how these factors are interdependent in the manufacturing process. Coarse fiber can never result in a sheet having a smooth finish no matter how fine the equipment; while on the other hand, the finest of furnishes and the best in stock preparation can result in a sheet no smoother than the papermaking equipment is capable of producing.

"Supervised for Your Satisfaction"

this FITCHBURG "TRIUNE" Cotton Dryer Felt

is doing a great job of drying paper

Made of the finest cotton, carefully checked all through the spinning, twisting, weaving and final inspection

5 distinct weaves — For every paper
Prestretched and preshrunk if you desire

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CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

CORES

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.

CORINTH, N. Y.

New York Paper and Pulp Market Review

Newsprint Paper Price Rises To $58 Per Ton On September 1 — Wood Pulp Supply Situation More Serious and Government Limits Use of Glassine and Like Papers — Rag and Paper Stock Strong.

Office of the PAPER TRADE JOURNAL.
Wednesday, July 28, 1943.

The downward trend in paper production and the expectation that a rather drastic control through priorities and allocations of wood pulp by the government is impending, is exerting pressure on the wholesale paper market. Reports from most of many manufacturers' representatives, jobbers, and general paper merchants this week, reflect growing concern at the prospect of this severe curtailment of paper production and distribution.

Support of this drastic limitation is given by the WPB amendment of July 23, 1943, to General Conservation Order M-286, Specialty Papers. The order states that requirements for defense has created a shortage of specialty papers for defense, for private account and for export. The order includes all types of paper regarded by the trade as specialty papers. No manufacturer or distributor shall accept any order for any type or grade of paper listed in column 2 (glassine, greaseproof and vegetable parchment) or sell or deliver any such paper, unless the seller knows that such paper will be used for the specified proper uses, which are enumerated in the regulation. The order became effective on July 23, 1943.

Newsprint paper will be increased to $58 per ton on September 1, 1943, by a joint announcement of July 22, issued by the Office of Price Administration and the Canadian Wartime Prices and Trade Board.

The index of general business activity for the week ended July 17 rose to 139.8, from 137.7 for the previous week, compared with 130.4 for the corresponding week last year. The index of paper board production was 139.8, compared with 133.2 for the previous week, and with 114.1 for the corresponding week last year.

Paper production for the week ended July 17 was estimated at 87.6%, compared with 81.5% for 1942, with 100.7% for 1941, with 91.3% for 1940, and with 81.7% for the corresponding week for 1939.

Paper board production for the week ended July 17 was 91.0%, compared with 71.0% for 1942, with 92.0% for 1941, with 77.0% for 1940, and with 70.0% for the corresponding week for 1939.

Wood Pulp

The chemical wood pulp market reflects the more rigid control of the recently adopted government provisions. Previously, allocation regulation included delivery and acceptance by pulp producers and consumers. The new provision now in effect allocates pulp for the manufacture of the most essential types and grades of paper, any remaining pulp being allocated in turn to the mills not otherwise supplied.

Rags

Increasing firmness in new cotton cuttings, all grades, is reported at this date. New whites are improved in demand, under reports of large lend-lease export shipments of threads. Ceiling prices are maintained in all grades.

Old Rope and Bagging

No important change in the old rope market has been reported this week. Mill demand for old No. 1 Manila rope is heavy and all available supplies are quickly absorbed for essential uses.

The recently enacted ruling on scrap bagging has sharply limited trading. Although some of the drastic regulations have been lifted, this market is awaiting the issuance of more favorable government regulations. Trading is now being conducted cautiously and on a limited scale. All bagging prices are nominal.

Old Waste Paper

Demand continues heavy for most grades of paper stock, with supplies reported by some mills as inadequate. Labor shortage in the collection of paper stock is reported as seriously affecting the supply situation. Some talk of government regulation in an attempt to increase the supply of old waste paper is heard in the trade. The price situation is reported as strong, with mill buying at ceiling prices.

Twine

Demand for all grades of twine and cordage continues heavy. The issuance of WPB Conservation Order M-328 on June 1, 1943, has drastically altered the priority situation. Ratings must now be made on WPB Preference Rating form, Order M-328, naming applicant, specifically describing the item and stating the quantity.

Textbooks Maintain Popularity

R. S. Kellogg, secretary of the Joint Textbook Committee of the Paper Industry, states that:

The McGraw-Hill Book Company reports sales of 375 copies of the Textbooks upon the Manufacture of Pulp and Paper during the first half of 1943. This brings the total sales of original and revised editions of the books to 36,113 since the publication of Volume I in February, 1921. Details are as follows:

TEXTBOOK SALES

	1st Half 1943	Total to date
Vol. I	39	5,062
Vol. II	38	4,260
Vol. III	111	10,899
Vol. IV	84	8,517
Vol V	103	7,375
	375	36,113

Such substantial sales of these books in the time of a world-wide war and hampered industry operations indicate no let-up in the desire of the men and women working in the paper industry to improve their opportunities for advancement. Particularly encouraging is the fact that Textbook sales during the half year just closed were greater than in the preceding period. From July 1 to December 31, 1942, 334 copies were sold compared with 375 so far this year.

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West Virginia Pulp and Paper Company

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35 East Wacker Drive Chicago
Public Ledger Building Philadelphia, Pa.
503 Market St. San Francisco, Cal.

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BLEACHED SULPHITE AND SODA PULP
BLEACHED AND UNBLEACHED KRAFT PULP

MILLS:

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

MISCELLANEOUS MARKETS

Office of the PAPER TRADE JOURNAL.
Wednesday, July 28, 1943.

BLANC FIXE—Prices on blanc fixe are firm and continue unchanged at prevailing market levels. The pulp is currently quoted at $40 per ton in barrels, at works; the powder is offered at $60 per ton, f.o.b., works. Demand reported fair for the week.

BLEACHING POWDER—Prices on bleaching power are firm. Current demand reported active. Bleaching powder is currently quoted at $2.50 per 100 pounds, in drums, at works.

CASEIN—OPA maximum prices on processed acid-precipitated casein are as follows: 10,000 pounds or more, 24 cents per pound; 2,000 pounds, 24¼ cents per pound; less than 2,000 pounds, 24¾ cents per pound, f.o.b., shipping point.

CAUSTIC SODA—Prices on caustic soda are reported unchanged. Demand for the current week is reported heavy. Solid caustic soda is currently quoted at $2.30 per 100 pounds; flake and ground at $2.70 per 100 pounds, in drums, at works.

CHINA CLAY—Quotations on china clay are firm and continue unchanged. Demand reported fair for the current week. Domestic filler clay is currently quoted at from $7.50 to $15 per ton; coating clay is quoted at from $12 to $22 per ton at mine. Imported clay is quoted at from $13 to $25 per long ton, ship side.

CHLORINE—Quotations on chlorine unchanged. Government demand for war use continues heavy. Supplies larger. Prices firm. Chlorine is currently quoted at from $1.75 per 100 pounds, in single-unit tank cars, f.o.b., works.

ROSIN—Quotations on some grades of rosin are higher for the current week. "G" gum rosin is currently quoted at $3.71 per 100 pounds in barrels, Savannah. "FF" wood rosin is currently quoted at $3.59 per 100 pounds in barrels, New York. Seventy per cent gum rosin size is currently quoted at $3.90 per 100 pounds, f.o.b., works.

SALT CAKE—Prices on salt cake are firm. Demand reported moderate for the current week. Domestic salt cake is currently quoted at $15 per ton in bulk; chrome salt cake at $16 per ton. All prices in car lots, f.o.b., shipping point.

SODA ASH—Quotations on soda ash are firm and continue to conform to prevailing market quotations. Demand heavy. Quotations on soda ash in car lots, per 100 pounds, are as follows: in bulk, $.90; in paper bags, $1.05; and in barrels, $1.35.

STARCH—Prices on corn starch are unchanged for the current week. Supply situation tight. Pearl is currently quoted at $3.10 per 100 pounds; powdered starch at $3.20 per 100 pounds. All prices in bags, car lots, f.o.b., Chicago.

SULPHATE OF ALUMINA—Quotations on sulphate of alumina are firm. Supply more limited for the current week. The commercial grades are currently quoted at $1.15 per 100 pounds; iron free at from $1.75 to $1.85 per 100 pounds, in bags, car lots, f.o.b., works.

SULPHUR—Prices of sulphur are firm and continue to conform to prevailing market quotations. Annual contracts are currently quoted at $16 per long ton, f.o.b., mines. Spot and nearby car lots are quoted at $18 per ton.

TALC—Quotations on talc are firm and continue unchanged at prevailing market prices. Domestic talc is currently quoted at from $16 to $21 per ton, at mills. No quotations on imported talc.

MARKET QUOTATIONS

All market quotations, excepting those otherwise designated as official OPA maximum prices, are based on the manufacturers' price level as of October 1-15, 1941; maximum wholesale prices are based on the merchants' maximum prices for stipulated quantities at a quoted price to all customers of a like class, as shown by the merchant's sales records of goods delivered during March, 1942. A merchant's price list in effect in March 1942, showing quotations of actual shipments, will establish the current maximum prices.

Paper

(Delivered New York)

News, per ton—			
Roll, contract	*$54.00	@	—
Sheets	62.00	"	—
* OPA Maximum Price.			
Kraft—per cwt.—Carload Quantities Zone A, f.o.b. Mill			
Superstandard Wrapping	*$5.25	@	—
No. 1 Wrapping	*5.00	"	—
Standard Wrapping	*4.75	"	—
Standard Bag	*4.375	"	—
* OPA Manufacturers' Prices.			
Tissues—Per Ream—Carlots			
White No. 1	1.12½	"	—
White No. 1 M. G.	1.10	"	—
White No. 1½	1.00	"	—
White No. 2	.90	"	—
Anti-Tarnish M.F.	1.20	"	—
Colored	—	"	—
Kraft	.95	"	—
Manila	.90	"	—
Toilet—1 M. Sheets—Per Case			
Unbleached	4.25	"	—
Bleached	5.70	"	—
Unbl. Toilet, 1 M.	4.16	"	—
Bleached Toilet	5.70	"	—
Paper Towels, Per Case—			
Unbleached, Jr.	2.60	"	—
Bleached, Jr.	3.20	"	—
Manila—per cwt.—C. l. f. a.			
No. 1 Jute	11.25	@	—
No. 1 Manila Wrapping, 35 lb.	6.00	"	6.25
No. 2 Manila Wrapping, 35 lb.	5.75	"	6.00
Boards, per ton—			
News	*48.00	@	—
Chip	*45.00	"	—
Sgl. Mla. Ll. Chip	*60.00	"	—
White Pat. Coated	*75.00	"	—
Kraft Liners 50 lb.	*63.00	"	—
Binders Boards	84.00	"	116.00

* OPA Base Prices per 10 tons. Less than 10 tons but over 3 tons, add $2.50; three tons or less, add $5; regular 35-39 basis, add $5.; basis 40-49, add $2.50; basis 91-100, add $2.50; basis 101-120, add $5.

The following are representative of distributors' resale prices:

Rag Content Bonds and Ledgers—White, Assorted Items, Delivered in Zone 1:

	Bonds	Ledgers
100% Rag Ext.		
No. 1	$39.10@$46.00	$40.25@$47.25
100% Rag	32.20 " 37.75	33.35 " 39.25
85% Rag	.... "	29.90 " 35.00
75% Rag	23.00 " 27.00	24.15 " 28.25
65% Rag	.... "	22.80 " 27.75
50% Rag	18.70 " 22.75	19.90 " 24.25
25% Rag	16.40 " 20.00	17.55 " 21.50

Colors at $1.00 cwt. extra.

Sulphite Bonds and Ledgers—White, Assorted Items. Delivered in Zone 1:

	Bonds	Ledgers
No. 1	$10.55@$12.75	$11.70@$14.25
No. 2	9.65 " 11.75	10.80 " 13.25
No. 3	9.20 " 11.25	10.35 " 12.50
No. 4	8.90 " 10.75	10.05 " 12.25

Colors $1.00 cwt. extra.

Free Sheet Book Papers—White, Cased Paper. Delivered in Zone 1:

No. 1 Glossy Coated	$13.65	@	$15.30
No. 2 Glossy Coated	12.40	"	14.00
No. 3 Glossy Coated	11.60	"	13.25
No. 4 Glossy Coated	11.15	"	12.75
No. 1 Antique (watermarked)	10.25	"	11.75
No. 2 Offset	9.60	"	11.00
A Grade E. F.	9.35	"	10.75
A Grade S. & S. C.	9.60	"	11.00
B Grade E. F.	8.85	"	10.25
B Grade S. & S. C.	9.10	"	10.50
C Grade E. F.	8.55	"	9.75
C Grade S. & S. C.	8.80	"	10.00
D Grade E. F.	8.25	"	9.50
D Grade S. & S. C.	8.50	"	9.75

Ivory & India at $.50 cwt. extra.

Wood Pulp

OPA Maximum Prices and Canadian Manufacturers Prices, Less Freight to Destination.

Bl. Softwood Sulphite	$76.00
Unbl. Softwood Sulphite	65.00@ 66.00
Bl. Hardwood Sulphite	73.50
Unbl. Hardwood Sulphite	63.50
Bl. Mitscherlich	81.00
Unbl. Mitscherlich	72.00
N. Bleached Sulphate	86.00
S. Bleached Sulphate	79.00
N. Semi-Bleached Sulphate	82.00
S. Semi-Bleached Sulphate	75.00
N. Unbl. Sulphate	73.00
S. Unbl. Sulphate	63.50
Bl. Soda	66.00
Unbl. Soda	62.00
Groundwood	46.00

Transportation Allowances

Applying to Producers of Wet Wood Pulp.

	Below 50% Air Dry Weight
Northeast	$13.50
Lake Central	13.50
Southern	16.00
West Coast (in area)	10.50
West Coast (out area)	16.50

	50%-80% Air Dry Weight
Northeast	$11.50
Lake Central	11.50
Southern	14.00
West Coast (in area)	9.50
West Coast (out area)	15.50

Applying to Producers of Dry Wood Pulp.

	Above 80% Air Dry Weight
Northeast	$8.50
Lake Central	8.50
Southern	11.00
West Coast (in area)	7.50
West Coast (out area)	13.50

Should freight charges actually exceed these allowances, the difference may be added to the maximum prices.

Domestic Rags

New Rags

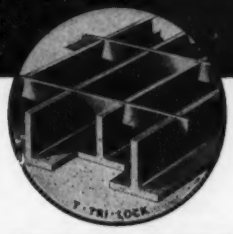
(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	6.50	@	7.25*
Silesias No. 1	—	"	5.75*
New Unbleached	6.75	"	7.50*
Blue Overall	—	"	5.50*
Fancy	—	"	3.50*
Washables	—	"	3.00*
Bleached Khaki Cuttings	—	"	4.25*
Unbleached Khaki Cuttings	—	"	3.50*

* OPA Maximum Prices.

Specify
TRI-LOK
OPEN STEEL FLOORING · SAFETY STEPS
CONCRETE ARMORING T. TRI-LOK

Full descriptive catalog of Tri-lok Grating, Safety Treads and other products on request.



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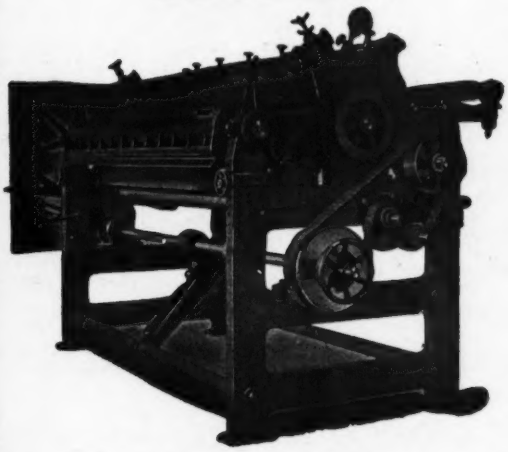
REPRESENTATIVES IN PRINCIPAL CITIES

MODEL 28

ROLLER BEARING CUTTER



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LAWRENCE, MASS.

MAKERS OF
SINGLE, DUPLEX AND DIAGONAL PAPER CUTTERS
CUTTER KNIVES, PATENT TOP SLITTERS.

THE RETURN OF COMPETITION

After the war competition in industry will be keener than ever before. Many millions of people who have been mobilized for war will be turned back into normal pursuits. New industries, new processes and new markets will dominate the economic picture.

The manufacturer who can meet his competitors' cost will be the one to survive. The low cost industries will be the ones to profit.

In this connection, remember that—

During the depression years of the early and middle thirties, industry expanded at a greater rate in the Seaboard Southeast than anywhere else in the Country.

The reason—

Operating factors are favorable and hence manufacturing costs are low.

When you plan on plant expansion, let us submit facts and figures on locations in the Seaboard Southeast. The inquiry will cost you nothing. It may be worth a lot to you.

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Improve Drying Efficiency and Obtain Positive Automatic Control of Moisture Content
20 TO 30 PER CENT. INCREASED CAPACITY FOR DRIERS . . . 10 TO 15 PER CENT. FUEL SAVING WITH EQUAL INCREASE IN BOILER CAPACITY
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STEAM SPECIALTIES CO. · 2245 Valley Ave. · INDIANAPOLIS, IND.

Old Rags

White, No. 1—			
Repacked	*3.80	"	—
Miscellaneous	*3.20	"	—
White, No. 2—			
Repacked	*2.90	"	—
Miscellaneous	*2.65	"	—
Third and Blues—			
Repacked	*2.20	"	—
Miscellaneous	*1.80	"	—
Roofing Rags—			
No. 1	*1.55	"	—
No. 2	*1.45	"	—
No. 3 (bagging)	*1.35	"	—
No. 4	*1.35	"	—
No. 5A	*1.35	"	—
Old Manila Rope	5.75	"	—

OPA Maximum Prices.

Foreign Rags

All Prices nominal

New Rags

New Dark Cuttings	2.25	@	2.40
New Mixed Cuttings	2.00	"	2.20
New Light Silesias	5.50	"	5.75
Light Flannelettes	5.50	"	5.75
New White Cuttings	7.00	"	7.50
New Light Oxfords	4.00	"	4.50
New Light Prints	3.00	"	3.25

Old Rags

No. 1 White Linens	7.50	"	8.50
No. 2 White Linens	6.50	"	7.50
No. 3 White Linens	4.50	"	—
No. 4 White Linens	2.25	"	3.25
No. 1 White Cotton	4.25	"	4.75
No. 2 White Cotton	3.25	"	3.75
No. 3 White Cotton	2.50	"	3.00
No. 4 White Cotton	1.90	"	2.20
Extra Light Prints	2.00	"	2.40
Ord. Light Prints	1.75	"	2.15
Med. Light Prints	1.55	"	1.95
Dutch Blue Cottons	2.25	"	2.50
French Blue Linens	3.00	"	—
Checks and Blues	2.00	"	—
Linsey Garments	1.90	"	2.00
Dark Cottons	1.50	"	1.60
Old Shopperies	1.30	"	1.45
New Shopperies	1.45	"	1.50
French Blues	2.25	"	2.50

BAGGING

(Prices to Mill, f. o. b. N. Y.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	4.25	@	4.35
Wool Tares, light	4.25	"	4.50
Wool Tares heavy	4.50	"	5.00
Bright Bagging	4.50	"	4.85
Manila Rope—			
Foreign	—	"	—
Domestic	*5.75	"	—
Jute Threads	5.50	"	—
No. 1 Sisal Strings	*4.00	"	—
Mixed Strings	2.00	"	—

*OPA Maximum Price.

Old Waste Papers

(F. o. b. New York)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	@	—
No. 1 Hard White Envelope Cuts	3.12½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, one cut	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Mixed Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
Mixed Groundwood Colored Shavings	.90	"	—
Overissue Magazines	1.67½	"	—
No. 1 Heavy Books & Magazines	1.57½	"	—
Mixed Books	.85	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Mixed Ledger, colored	1.87½	"	—
New Manila Envelope Cuttings, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
Extra Manilas	1.85	"	—
Mixed Kraft, Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
Triple Sorted, No. 1 Brown Soft Kraft	2.50	"	—
New 100% Kraft Corrugated Cuttings	2.25	"	—
No. 1 Assorted Old Kraft	1.75	"	—
New Jute Corrugated Cuttings	.90	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Box Board Cuttings	.72½	"	—
White Blank News	1.65	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
Old Corrugated Containers	.82½	"	—
Mill Wrappers	.85	"	—

Twines

(F. o. b. Mill)

(Soft Fiber)

Coarse Polished—			
India	.21	@	—
White Hemp	.21	"	—
Fine Polished—			
Fine India	.26	"	—
Unpolished—			
Box	.17¼	"	—
Paper Makers	.17	"	—
Tube Rope	.19	"	—
Wall Paper	.20½	"	—
Wrapping	.23	"	—
Soft Fiber Rope	.19	"	—
Cotton	.25	"	—

(Hard Fiber)

Medium Java	.18	"	—
Mex. Sisal	.16	"	—
Manila		"	—

PHILADELPHIA

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White No. 1	.07¼	@	.07½
New White No. 2	.04½	"	.05
Light Silesias	.04½	"	.04¾
Silesias, No. 1	.04	"	.04¼
Black Silesias, soft	.03¾	"	.04
New Unbleached	.07¼	"	.07½
Washable Prints	.03¼	"	.03½
Washable No. 1	.02	"	.02¼
Blue Overall	.04½	"	.05½
Cottons—According to grades—			
Washable shredding	—	"	.01¾
Fancy Percales	.03¼	"	.03½
New Black Soft	.02¾	"	.03
New Dark Seconds	1.75	"	2.00
Khaki Cuttings—			
No. 1 O. D.	.03	"	.03¼
No. 2 Mixed	.02¼	"	.02½
Corduroy	.01¾	"	.02¼
New Canvas	.04¾	"	.05¼
New Black Mixed	—	"	.02½

Domestic Rags (Old)

White No. 1—Repacked	3.80	"	—
White No. 2—Repacked	2.90	"	—
Miscellaneous No. 1	3.20	"	—
Miscellaneous No. 2	2.65	"	—
Thirds and Blues—			
Miscellaneous	1.80	"	—
Repacked	2.20	"	—
Black Stockings—			
(Export)	Nominal		
Roofing Stock—			
Foreign No. 1	Nominal		
Domestic No. 1	1.55	"	—
Domestic No. 2	1.45	"	—
Roofing Bagging	1.35	"	—
Old Manila Rope	5.75	"	—

Bagging

(F. o. b. Phila.)

Gunny No. 1—			
Foreign	Nominal		
Domestic	3.00	"	3.50
Sisal Rope	3.75	"	—
Mixed	1.00	"	1.50
Scrap—			
No. 1	3.25	"	3.50
No. 2	1.75	"	1.80
Wool Tares, heavy	4.00	"	4.25
No. 1 New Light Burlap	3.00	"	4.00
New Burlap Cuttings	3.75	"	4.00

Old Papers

(F. o. b. Phila)

OPA Maximum Prices

No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
Soft White Shavings, one cut	2.50	"	—
White Blank News	1.65	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Hard White Shavings, ruled	2.50	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.75	@	4.00
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*4.25	"	—
Mixed Rope	1.35	"	1.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.60	"	3.85
Wool Tares—			
Foreign	(nominal)		

BOSTON

Old Papers

(F. o. b. Boston)

OPA Maximum Prices

No. 1 Hard White Shavings, unruled	2.87½	@	—
No. 1 Hard White Shavings, ruled	2.50	"	—
Soft White Shavings, Misc.	2.15	"	—
No. 1 Fly Leaf Shavings	1.67½	"	—
No. 2 Fly Leaf Shavings	1.12½	"	—
No. 1 Groundwood Fly Leaf Shavings	1.25	"	—
No. 2 Groundwood Fly Leaf Shavings	.90	"	—
Mixed Colored Shavings	.75	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
Hard White Envelope Cuts, one cut	3.37½	"	—
Triple Sorted No. 1 Brown Soft Kraft	2.50	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
Kraft Envelope Cuttings	3.25	"	—
No. 1 Heavy Books & Magazines	1.57	"	—
New Manila Envelope Cuts, one cut	2.87½	"	—
New Manila Envelope Cuttings	2.65	"	—
White Blank News	1.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Overissue News	.85	"	—
Box Board Cuttings	.72½	"	—
New Corrugated Cuttings, Kraft	2.25	"	—
Old 100% Kraft Corrugated Containers	1.75	"	—
Old Corrugated Containers	1.15	"	—
Jute Corrugated Cuttings	1.07½	"	—

Bagging

(F. o. b. Boston)

Gunny Bagging—			
Foreign	(nominal)		
Domestic	3.75	@	4.00
Sisal Rope No. 1	*4.75	"	—
Sisal Rope No. 2	*4.25	"	—
Mixed Rope	1.35	"	1.50
Transmission Rope—			
Foreign	(nominal)		
Domestic	2.75	"	3.00
Manila Rope—			
Foreign	(nominal)		
Domestic	5.75	"	—
Soft Jute Rope	4.50	"	5.00
Jute Carpet Threads	3.00	"	3.50
Bleachery Burlap	8.50	"	9.00
Scrap Burlap—			
Foreign	(nominal)		
Domestic	3.60	"	3.85
Wool Tares—			
Foreign	(nominal)		
Domestic	4.25	"	—
Aust. Wool Pouches	4.65	"	4.87½
New Burlap Cuttings	4.75	"	5.00
Heavy Baling Bagging	4.00	"	4.25
Paper Mill Bagging	2.50	"	3.00
No. 2 Bagging	1.35	"	—

*OPA Maximum Price.

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.04½	@	.04¾
Fancy Percales	.04¼	"	.05
New White No 1	.06¾	"	.07
New Light Flannelettes	.05½	"	.06
Canton Flannels, Bleached	.06	"	.06½
Underwear Cutters, Bleached	.06¾	"	.06¾
Underwear Cutters, Unbleached	.05¾	"	.06
Silesias No. 1	.06	"	.06¼
New Black Silesias	.03	"	.03½
Red Cotton Cuttings	.03½	"	.04
Soft Unbleached	.06½	"	.06¾
Blue Cheviots	.05½	"	.06
Fancy	.02¾	"	—
Washable	.02¾	"	—
Khaki Cuttings	.02¾	"	.03
O. D. Khaki	.03½	"	.03¾
Corduroy	.03¼	"	.03½
New Canvas	.06¼	"	.06¾
B. V. D. Cuttings	.06¼	"	.06¾

Domestic Rags (Old)

(F. o. b. Boston)

White No. 1—Repacked	3.80	@	—*
White No. 1—Miscellaneous	3.20	"	—*
White No. 2—Miscellaneous	2.65	"	—*
Twos and Blues, Repacked	2.20	"	—*
Old Blue Overalls	2.25	"	2.50
Thirds and Blues, Repacked	2.20	"	—*
Miscellaneous	1.80	"	—*
Black Stockings	3.50	"	4.00
Roofing Stock—			
No. 1	1.55	"	—*
No. 2	1.45	"	—*
No. 3	1.35	"	—*
No. 4	1.35	"	—*
No. 5, Quality A	1.35	"	—*
Quality B	1.20	"	—*
Quality C	.95	"	—*
Old Manila Rope	5.75	"	—

*OPA Maximum Prices.

Foreign Rags

(F. o. b Boston)

Canvas	(nominal)
Dark Cottons	(nominal)
Dutch Blues	(nominal)
New Checks and Blues	(nominal)
Old Fustians	(nominal)
Old Linsey Garments	(nominal)
New Silesias	(nominal)

CHICAGO

Waste Paper

(F. o. b. Chicago)

OPA Maximum Prices.

Shavings—			
No. 1 Hard White Envelope Cuts, one cut	3.37½	"	—
No. 1 Hard White Shavings, unruled	2.87½	"	—
No. 1 Soft White Shavings	2.50	"	—
No. 1 White Ledger	2.17½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
White Blank News	1.65	"	—
Mixed Kraft Env. & Bag Cuttings	2.75	"	—
No. 1 Assorted Old Kraft	1.75	"	—
Overissue News	.85	"	—
No. 1 News	.75	"	—
No. 1 Mixed Paper	.70	"	—
No. 1 Roofing Rags	1.55	"	—
No. 1 Roofing Bags	1.45	"	—
Misc.	2.13	"	—
No. 1 White Ledger	2.17½	"	—
No. 2 Ledger, colored	1.87½	"	—
No. 1 Heavy Books & Magazines	1.67½	"	—
Overissue Magazines	1.67½	"	—
New Manila Envelope Cuttings	2.65	"	—
No. 1 Assorted Old Kraft	1.75	"	—
No. 1 Mixed Paper	.70	"	—
Box Board Cuttings	.72½	"	—
Kraft Corrugated Cuttings	2.25	"	—
Old Corrugated Containers	1.15	"	—
Overissue News	.85	"	—
No. 1 News	1.00	"	—